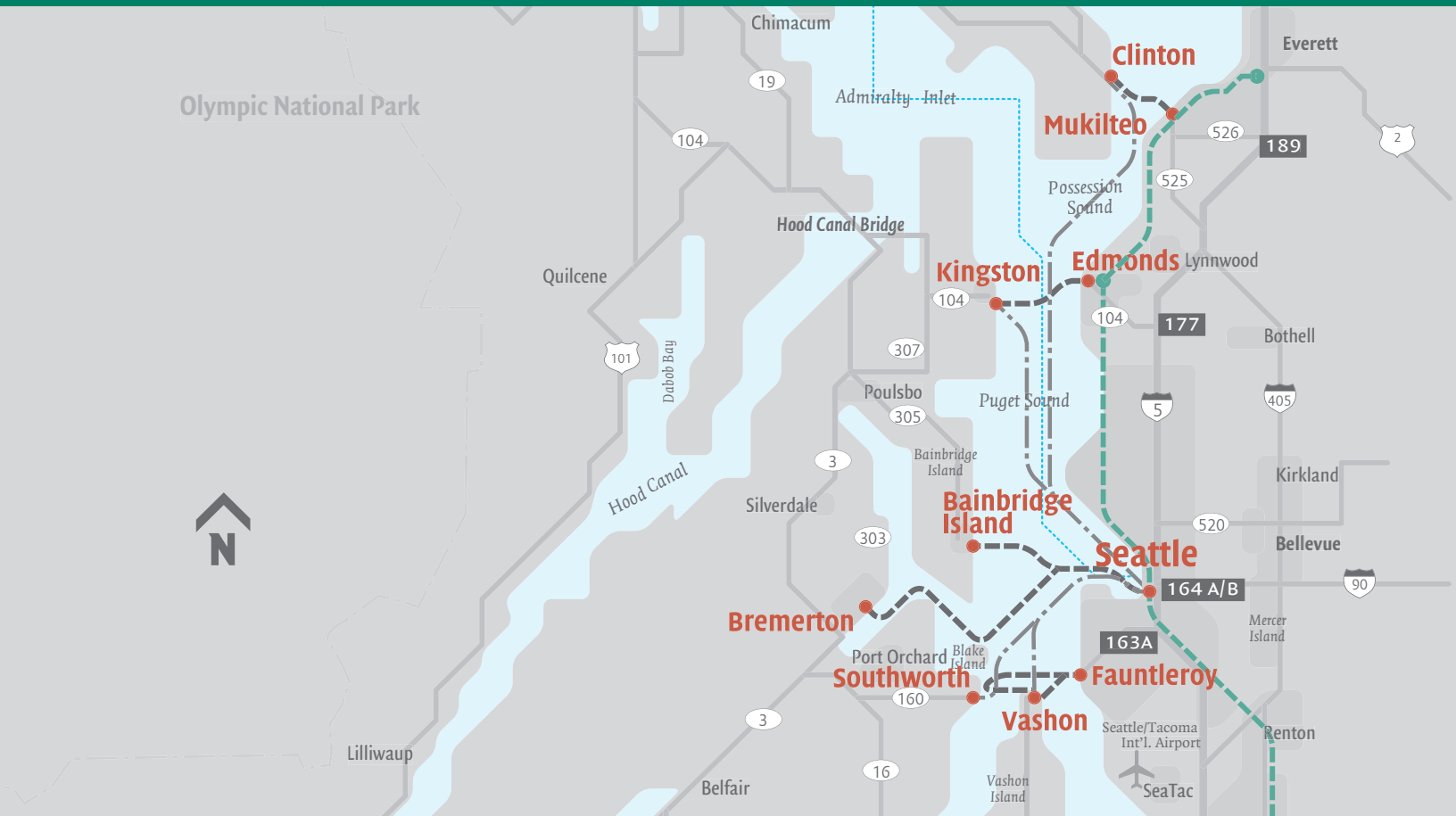
Washington State Ferries

Ten-Year Passenger Strategy for Washington's Multimodal Ferry Transportation System

January 2005

Washington State Department of Transportation



About Washington State Ferries…

Formed in 1951, WSF is the largest ferry transit system in the U.S.
WSF serves about 24 million passenger and vehicle trips per year;
Operates 10 ferry routes and runs nearly 500 sailings per day;
Provides service to eight Washington State counties and the province of British Columbia;
Operates and maintains 20 terminals from Point Defiance to Sidney, B.C.;
Provides priority loading for freight, bicycles, vanpool, carpools; and
Safely operated about 175,000 sailings last year.

BERK & ASSOCIATES
120 Lakeside Avenue
Suite 200
Seattle, WA 98122
www.berkandassociates.com
P (206) 324-8760

"Helping Communities and Organizations Create Their Best Futures"

Principals:	Bonnie Berk and Michael Hodgins
Project Manager:	Bonnie Berk
Lead Analysts:	Michael Hodgins, Brian Murphy, Michael Regnier
Additional Analysts:	Matt Stevenson, Kapena Pflum
Report Production:	Meghann Glavin and Erica Natali

WASHINGTON STATE FERRIES
VISION AND TEN-YEAR PASSENGER STRATEGY FOR WASHINGTON'S MULTIMODAL FERRY TRANSPORTATION SYSTEM

EXECUTIVE SUMMARY

Introduction: Background and Study Context

Background. The 2004 Legislature enacted a proviso [ESHB 2474, Section 506] focused on the creation of a coordinated, integrated marine and landside multimodal transportation system to connect the state's people, jobs and communities. The proviso calls for a long-range plan and supporting strategy to provide "policy guidance to define and maximize efficient delivery of quality marine transportation service to the traveling public." The strategy should identify "the most appropriate means of moving foot passengers across central Puget Sound," using Washington State Ferries (WSF) vessels, alternative operators, or a hybrid combination of both, in the short and longer-term.

Study Context: Passenger-Vehicle Boats Provide Significant Passenger Ferry Service. A starting point for assessing passenger-only ferry (POF) options for the Puget Sound is an understanding of the role that WSF's passenger-vehicle boats play in the region's multimodal transportation system. WSF is the nation's largest ferry system, providing 24 million passenger trips per year with a fleet of 28 boats. About 50% of these trips are commute-related: WSF is also the state's second largest provider of daily transit service.

Table ES-1 presents a summary of total passenger walk-on trips provided by WSF on the Central Puget Sound routes in calendar year 2004. As the Table shows, in 2004 WSF carried more than 5.73 million foot passengers, of which about 194,000 or 3.4%, were transported on the Seattle-Vashon POF route. The balance, 5.54 million or 96.6% of total Puget Sound riders, traveled on WSF's passenger-vehicle ferries.

Table ES-1
2004 Central Puget Sound Walk-on Passenger Ridership, by Route

	Calendar Year 2004	Percent of Total
Seattle-Bainbridge	2,631,510	45.9%
Seattle-Bremerton	1,198,066	20.9%
Edmonds-Kingston	611,734	10.7%
Mukilteo-Clinton	528,584	9.2%
Fauntleroy-Vashon	349,353	6.1%
Seattle-Vashon POF	193,741	3.4%
Fauntleroy-Southworth	169,850	3.0%
Vashon-Southworth	48,486	0.8%
Total	**5,731,324**	**100.0%**

Source: Washington State Ferries, Berk & Associates, 2004

Passenger-Only Ferry Route Assessments

Seattle-Clinton. Low demand for POF service and a relatively long trip length from Clinton to Seattle means that this route would not be viable under any operating model studied. The Mukilteo-Clinton route has ample capacity to serve passenger demand: by 2015 the route will be operating at 47% capacity, with about 5,000 passenger spaces available in the 4-hour P.M. peak. Multimodal transportation choices for Clinton riders are also available through the Sounder commuter rail service, with direct connections from the Mukilteo Multimodal terminal to downtown Seattle.

Seattle-Kingston. In 2010 WSF riders choosing the Seattle-Kingston POF route will be drawn 68% from the Seattle-Bainbridge route, and 32% from Edmonds-Kingston. By 2015, this trend will have accelerated: 70% of the riders switching from WSF routes would be drawn from Seattle-Bainbridge and 30% from Edmonds-Kingston. In addition, it is expected that the introduction of a new route will generate new induced trips. Based on WSF's history the number of induced trips is estimated to account for an additional 20% of ridership.

There will be considerable walk-on passenger capacity on these routes available in the 4-hour P.M. peak in 2015: Seattle-Bainbridge will be at 73% of passenger capacity and Edmonds-Kingston will be at 27% of capacity. However by 2015, at the "peak of the peak" period there will be at least one sailing on the Seattle-Bainbridge route that exceeds available passenger capacity. The Transportation Commission's adopted level of service goal calls for accommodating all pedestrians on each sailing — zero boat wait. If the route's capacity on a peak-hour sailing is reached by 2015, riders will have the option of waiting for the next boat, since there is capacity within the 4-hour peak period, or taking an alternative WSF route — Edmonds-Kingston with a Sounder connection or a Seattle-Bremerton sailing. A successful public-private Seattle-Kingston POF service would provide riders with another choice, one which could mitigate any potential overloaded sailings on the Seattle-Bainbridge route.

In January 2005 a private operator began providing Seattle-Kingston POF service through a Joint Development Agreement with Kitsap Transit. Kitsap Transit and the private operator have worked hard to plan for this service, and this effort – which was encouraged by the Legislature through ESHB 1853 – should be respected. However, given the ridership diversion from WSF's existing passenger-vehicle ferry routes, the substantial passenger capacity available on those routes, and the regional investments in multimodal transportation linkages connecting the Edmonds-Kingston corridor to downtown Seattle, it would not be in the State's interest to financially support the public-private Kingston POF service.

Seattle-Vashon. This POF service already exists and provides some relief to congested conditions at the Fauntleroy terminal, where it is difficult to stage bus service and there is no overhead loading to separate pedestrians from vehicles. This terminal limitation at Fauntleroy prevents taking full advantage of the passenger-vehicle ferries' people-moving capabilities. In addition to providing service to the Vashon market, the route provides service to riders from Southworth. In 2003 46% of demand for the route was from transfers from Southworth-Vashon; by 2015, assuming that the route continues to serve the Southworth market, these riders will comprise 64% of ridership demand. Passenger capacity analysis shows that by 2010 the route will be at 109% of capacity for the 4-hour P.M. peak period, driven primarily by growth in the South Kitsap market. This over-capacity situation will worsen by 2015, when the route will be at 118% of capacity. Thus continuing to effectively serve this route is likely to require change from the status quo.

If the Seattle-Southworth market were to be served directly, by 2015 two-thirds of the ridership on the Seattle-Vashon route would likely choose that direct service. This would result in a smaller market for Seattle-Vashon POF service, and one with limited growth potential.

Seattle-Southworth. This market is currently served, with many Southworth residents traveling to Vashon and then riding the Seattle-Vashon POF. The analysis shows that there is available P.M. peak passenger capacity on the Fauntleroy-Southworth route; by 2015 passenger capacity will be 56%.

A key strategic question facing WSF is how to best meet demand in the South Sound market. A longer-term solution to this challenge would be for WSF to provide direct passenger-vehicle service from Southworth to Seattle; this option is being studied by WSF in 2005 as part of the agency's Long

Range Strategic Plan. This direct connection would relieve vehicle pressure on the constrained Fauntleroy terminal. If this option becomes the preferred long-term strategy for the corridor, providing Seattle-Southworth POF service in the near term could help build this market, easing the eventual transition to direct Seattle-Southworth passenger-vehicle service while diverting some vehicle traffic from Fauntleroy.

A new direct Seattle-Southworth passenger-vehicle route will require significant improvements at Seattle's Colman Dock. WSF is currently involved in a comprehensive master planning and environmental review process for Colman Dock, in a collaborative effort with the City of Seattle. The City is keenly interested in planning projects that affect Colman Dock, and is an active participant in WSF's Long-Range Planning process. Seattle's interests in Colman Dock planning include fitting the facility into the City's overall waterfront planning process, a multi-year urban design project.

Seattle-Vashon-Southworth POF Triangle Service. An opportunity exists for WSF to provide improved service to the Vashon and Southworth markets by modifying the current POF service. These markets are already served by WSF, albeit in a suboptimal and inconvenient manner. Rather than splitting these markets and operating two direct routes, a South Sound POF Triangle Route could be implemented, connecting Vashon, Southworth and Seattle. This strategy takes advantage of the physical proximity of the two ports (an eight minute crossing time) and provides a relatively low-cost and efficient means of maintaining service to two existing WSF markets.

This route option would provide a number of benefits, such as:

- Address the need to recapitalize the fleet operating on the Seattle-Vashon POF route (the Skagit and Kalama). These vessels are nearing the end of their useful lives and must be replaced if service is to continue.
- Provide improved service to the Southworth market by not requiring passengers to transfer at Vashon.
- Combine the relatively high ridership demand potential from Southworth with lower ridership demand originating in Vashon, allowing for more efficient continuation of service at Vashon.
- Build the market for a potential direct Seattle-Southworth passenger-vehicle service in the future.

WSF Options to Serve the South Sound POF Market

Comparative POF Scenarios Assuming WSF Operations. Three scenarios are possible for WSF to serve its South Sound markets; these are summarized in Table ES-2, which presents a comparison of service characteristics, capital investment requirements, ridership and operating revenues and costs for the 2005-07 and 2007-09 biennia. Due to the peak nature of the demand on these routes, the analysis is predicated on a change in WSF labor agreements to allow split shifts. This will provide the most cost-effective service on a route structure with an almost exclusively commuter orientation. Another important assumption is the higher fare assumed (an increase of $1.00 for a round trip) in the scenarios where service is expanded. Key findings for the three scenarios are:

1. **Continue Seattle-Vashon Service.** Maintaining current Seattle-Vashon service to meet demand from both Vashon and Southworth markets could be accomplished by deploying the Chinook and Snohomish to replace the Skagit and Kalama. Capital costs to restart the vessels and improve the Vashon terminal are $2.0 million. With estimated ridership of 246,000, the route will operate at a loss of approximately $1.9 million in the 2007-09 biennium. This would continue a suboptional service pattern for Southworth riders.

2. **Continue Seattle-Vashon Service and Add Direct Seattle-Southworth Service.** Adding direct Seattle-Southworth POF service in addition to WSF's Seattle-Vashon service and running service in an effective manner will involve replacing the Skagit and Kalama with a 149-passenger vessel, and purchasing two 250-passenger boats, one to serve Seattle-Southworth and one as a back-up for both routes. Net capital costs, including terminal improvements, sale of the Chinook and Snohomish and purchase of smaller, more appropriately sized vessels are estimated at $17.1 million. With an estimated ridership of 349,000, the route will operate at a loss of $2.2 million for the biennium.

3. **Serve the Vashon and Southworth Markets through a POF Triangle Service.** A South Sound POF Triangle service will require $3 million in capital costs: $1.2 million to redeploy the Chinook and Snohomish and $1.8 million in terminal costs. With estimated ridership of 333,500, the route will operate at a biennial loss of about $900,000.

The POF Triangle service option provides the most cost-effective WSF operating solution for the South Sound over the next ten years. It represents a substantial improvement over existing Seattle-Vashon service since it would provide a direct connection to Southworth without an increase in operating costs and with similar capital costs to a recapitalized Seattle-Vashon option. Because of the Southworth connection, the Triangle service is estimated to attract approximately 90,000 more trips than the Seattle-Vashon scenario. This additional ridership results in higher farebox revenues, higher cost recovery rates and lower subsidy requirements.

Providing separate service to Vashon and Southworth would result in only a modest increase in ridership over the Triangle configuration. This increase in ridership is offset by higher operating costs, higher subsidy requirements and a lower cost recovery rate. Capital requirements are an important factor too: by sizing the route to effectively use the Chinook and Snohomish, vessel requirements are significantly lower with the Triangle option than with a separate Seattle-Southworth route.

Table ES-2
Comparison of WSF South Sound POF Scenarios
(Assuming Split Shifts and 2004 Dollars)

	Maintain Current Seattle-Vashon Service to Meet Demand	Add WSF Seattle-Southworth POF Service and Modify Seattle-Vashon POF Service	Implement South Sound POF Triangle Service
Service Characteristics			
Operations	One 8-hour split shift	One 8-hour split shift	One 8-hour split shift
Vessels in service	One 350-passenger vessel	Southworth: one 250-pax Vashon: one 149-pax	One 350-passenger vessel
WSF Capital Investment in 2005-7 Biennium			
Description	Replace Skagit, Kalama by deploying the Snohomish and Chinook; improve Vashon terminal	Replace Skagit, Kalama with one 149-pax vessel; purchase 250-pax vessel for Southworth-Seattle; purchase another 250-pax as backup for Vashon and Southworth routes; improve Southworth terminal	Deploy Snohomish, Chinook; improve Southworth and Vashon terminals
Capital to restart vessels	($1,200,000)	-	($1,200,000)
Capital to purchase new vessels	-	($23,000,000)	-
Net proceeds from sale of POFF	-	$6,920,000	-
Capital to improve terminals	($800,000)	($1,000,000)	($1,800,000)
Total capital required	($2,000,000)	($17,080,000)	($3,000,000)
WSF Finances for 2007-9 Biennium			
Ridership			
Total annual ridership	246,000	349,000	333,500
Number of 4-hour peak sailings	2	2	2
WSF Operating Finances for Biennium			
One-way fare (commuter rate)	$3.28	$3.80	$3.80
Fare revenue	$1,614,000	$2,653,000	$2,536,000
Operating costs	($3,525,000)	($4,829,000)	($3,525,000)
WSF operating surplus/(shortfall)	($1,911,000)	($2,176,000)	($989,000)
Farebox recovery rate	46%	55%	72%
Surplus/(subsidy) per passenger	($7.77)	($6.23)	($2.97)

Assumptions

- Figures are in 2004 dollars
- Net proceeds from sale of Chinook and Snohomish are based on an assumed $4M per vessel purchase price less sales costs assumed to be 10% and $1M in capital costs to prepare for sale.
- Estimates for current service configuration assume continuation of current fares. Fares for expanded/enhanced service are assumed to be $1.00 more per round trip.

Source: Washington State Ferries, Berk & Associates, 2004

Funding and Implementation Plan for a South Sound POF Triangle Service. Figure ES-1 shows the Triangle route's design and the close proximity of the Vashon and Southworth terminals.

Figure ES-1
South Sound POF Triangle Service Route Option

Source: Washington State Ferries, Berk & Associates, 2004

To implement POF service on the South Sound Triangle, approximately $1.2 million in vessel start-up costs and $1.8 million in terminal improvements will be required. These investments are sufficient to support initial operations with service provided by a single vessel operating in two 4-hour periods, to meet morning and evening peak demand.

With flexibility in operating patterns, and split shifts instituted to manage labor costs, a service plan for the South Sound Triangle would not have an adverse impact on WSF finances relative to the current budget for Seattle-Vashon POF service. Rather, the net financial impact to WSF would be positive. For 2007 and 2008, the initial two years of operations, costs of providing service are projected to be lower than the amount budgeted for the existing 16-hour POF Seattle-Vashon service. From 2009 onward, the cost of providing the Triangle service is projected to be greater, but so too are revenues, which are enhanced through higher ridership and higher fare collections.

Public-Private Option for Seattle-South Kitsap Service

Plans are underway to implement privately-operated direct Seattle-South Kitsap POF service under the auspices of Kitsap Transit. An estimated 83% of ridership on this route will come from existing and future WSF riders.

Financial Impacts on WSF. The financial impacts on WSF will depend on the fleet size and levels of service offered by a public-private operator. The more service the operator puts on the water, the greater the negative financial impact to WSF, as riders are increasingly drawn to the route from WSF's routes, particularly the Seattle-Vashon POF route. WSF's farebox recovery rates likewise decline as the private operator adds service. With one-boat service, the total annual financial impact to WSF is a$456,351 loss, and cost recovery declines for Seattle-Vashon POF service from 48% to 32%. With a five-boat service, the annual financial impact to WSF is estimated to be a $1.6 million loss and cost recovery on Seattle-Vashon drops to 17%. These percentages assume two 4-hour shifts for WSF. In

comparison, in FY 2004, operating with two 8-hour shifts the route's cost recovery rate was 28%. As these metrics suggest, the viability of WSF's Seattle-Vashon POF route could be called into question given such reductions in ridership and cost recovery performance.

A key question for WSF is whether a scenario that combines a public-private operation serving South Kitsap with a scaled back Vashon service offers a more cost-effective solution in the South Sound. Table ES-3 presents a comparison of this scenario with the WSF POF Triangle option.

Table ES-3
Comparison of WSF South Sound POF Scenarios with and without Seattle-South Kitsap POF Service

	Implement WSF South Sound Triangle POF Service	South Kitsap Service Provided by Non-WSF Operator, Modify WSF Vashon POF Service
Service Characteristics		
Operations	One 8-hour split shift	One 8-hour split shift
Vessels in service	One 350-passenger vessel	One 149-passenger vessel
WSF Capital Investment in 2005-7 Biennium		
Description	Deploy Snohomish, Chinook; improve Southworth and Vashon terminals	Replace Skagit and Kalama with two 149-passenger vessels
Capital to restart vessels	($1,200,000)	-
Capital to purchase new vessels	-	($10,000,000)
Net proceeds from sale of POFF	-	$6,920,000
Capital to improve terminals	($1,800,000)	-
Total capital required	($3,000,000)	($3,080,000)
WSF Finances for 2007-9 Biennium		
Ridership		
Total annual ridership	333,623	85,586
Number of 4-hour peak sailings	2	2
WSF Operating Finances for Biennium		
One-way fare (commuter rate)	$3.80	$3.28
Fare revenue	$2,536,000	$650,000
Operating costs	($3,525,000)	($2,044,000)
WSF operating surplus/(shortfall)	($989,000)	($1,394,000)
Revenue loss from WSF transfers	($90,000)	($456,000)
Total WSF surplus/(shortfall)	**($1,079,000)**	**($1,850,000)**

Assumptions

- Figures are in 2004 dollars
- Net proceeds from sale of Chinook and Snohomish are based on an assumed $4M per vessel purchase price less sales costs assumed to be 10% and $1M in capital costs to prepare for sale.
- Revenue loss is based on a public-private one-boat operation serving South Kitsap-Seattle additional service would result in greater number of transfers and higher revenue losses
- Estimates for current service configuration assume continuation of current fares. Fares for expanded/enhanced service are assumed to be $1.00 more per round trip.

Source: Washington State Ferries, Berk & Associates, 2004

Key findings from this comparative route analysis are:

- Changing to a 149-passenger vessel and operating with split shifts would result in lower operating costs for WSF, a savings of approximately $1.5 million per biennium.
- There is virtually no difference in capital costs for WSF between the two scenarios.
- With the current fare structure and lost ridership there would be a loss in fare revenue on the Seattle-Vashon POF service of approximately $1.9 million per biennium.
- For both the POF Triangle operation and the Non-WSF South Kitsap scenario there will be riders switching from existing WSF routes to the POF service. For the Triangle route, approximately $90,000 of fare revenue would be simply shifted from other WSF routes to the POF service. In the Non-WSF scenario, approximately $450,000 is expected to be shifted from WSF routes to the public-private operator with a one-boat operation. As the Non-WSF operation grows, the revenue shift would increase.
- The net effect of a public-private operation in the South Kitsap market is that subsidy requirements for the Seattle-Vashon POF service would be immediately higher. Subsidy requirements would likely increase over time, particularly with any increase in service by the Non-WSF operator.

Federal Funding Opportunities for POF Capital Needs

Over the past six-year authorization period of TEA-21, the federal authorizing legislation for transportation funding, WSF received nearly $100 million in federal funding, or approximately 20% of its capital program. Annual earmarks, direct Congressional requests considered on a competitive basis, are one of the funding sources that WSF has relied upon for vessel and terminal improvements. There is a limited amount of money available nationally through the earmarking process: the Ferry Boat Discretionary (FBD) Fund distributes about $18 million per year in discretionary funds. WSF has historically done well in securing funding through this competitive process. However, the agency now finds itself in competition with Kitsap Transit and potentially other agencies for funding from the same source. For federal FY 2005, WSF requested $25.8 million in earmarks, but only received $750,000. In contrast, Kitsap Transit received $1.75 million of its $6.0 million FBD funding request.

Kitsap Transit has an ambitious federal funding plan for its POF program, including plans to request $2.0 million in federal FY 2006 and $12.0 million in federal FY 2007. There are many factors that influence the federal discretionary grant programs. Geographic equity is one; there is a desire to distribute the money to worthy projects in a variety of states and agencies. Therefore, agencies within each state can be competing for the same limited pot of funding. If Kitsap Transit or other agencies continue to receive funding from the discretionary accounts, WSF's capital program and schedule will be adversely affected.

Conclusion: Vision, Ten-Year Passenger Strategy and Implementation Plan

This analysis has assessed WSF's operating and financial situation and challenges, existing and forecasted passenger capacity on its passenger-vehicle boats, ridership demand for potential new routes, and vessel and terminal improvement costs associated with an enhanced POF program. An important finding of the analysis is that WSF has significant passenger-carrying capacity on its Central Puget Sound passenger-vehicle ferries, and with a few exceptions will continue to have excess capacity through 2015, even in the westbound 4-hour P.M. peak period and in the 1-hour "peak of the peak" commute period. Until WSF's passenger-vehicle and terminal capacities are reached, and with relatively low marginal costs of carrying passengers (e.g. some terminal staff for overhead loading and fare collection), the most efficient and cost-effective means of moving passengers across Puget Sound is via WSF's large passenger-vehicle boats.

Based on WSF's strategic and operational situation and the range of options for moving people across Puget Sound, including multimodal transportation options, this report suggests that an optimal ten-year passenger strategy for WSF will be based on the following four guiding principles:

1. Cost-effectively utilize WSF's existing assets and passenger-carrying capacity, including passenger-vehicle vessels and terminals.
2. Leverage the region's multimodal transportation infrastructure and investments.
3. Mitigate bottlenecks and chokepoints in WSF's system, to increase overall network efficiency.
4. Be operationally and financially sustainable, to enable ferry riders and communities to make long-term employment and location decisions.

The Vision and Strategy which best meets these objectives is for WSF to:

A. Continue to serve the Clinton market through the Clinton-Mukilteo passenger-vehicle route, with connecting multimodal service to Seattle via Sounder commuter rail service.

B. Continue to serve the North Kitsap market through the Seattle-Bainbridge and Edmonds-Kingston routes, with connecting service to Seattle via the Sounder at Edmonds. Respect the service plan and operations of Kitsap Transit and its private operator, which have begun direct Seattle-Kingston POF service, but do not invest state resources in this service.

C. Develop a South Sound POF Triangle route to serve WSF's existing markets at Vashon and Southworth. Consider this initiative as a potential transition strategy to evolve toward Seattle-Southworth passenger-vehicle ferry service, an option being studied in WSF's Long-Range Planning process. Implementation of a POF Triangle route will require WSF to:

   - Make improvements to the Chinook and Snohomish necessary to redeploy them.
   - Proceed with terminal improvements to begin the service as expeditiously as possible.
   - Operate in two 4-hour split shifts to accommodate two peak period trips and keep operating costs at or below the current Seattle-Vashon service.
   - Increase fares on the route by $1.00 per round trip.

D. Recognize and address the economics of sustainable POF operations by working with WSF's fleet unions to implement split shifts or part-time schedules and other work rule changes to allow WSF to match service hours to peak period ridership demand.

E. Develop a reliable and sustainable POF service plan, including ongoing funding, that will allow WSF customers to make employment and housing choices based on predictable WSF service.

If Seattle-South Kitsap POF service is implemented by a public-private provider, WSF's South Sound POF Triangle route would not be feasible, and WSF would need to restructure its existing Seattle-Vashon POF service to reflect reduced ridership and cost recovery on the route. Under these conditions, Seattle-Vashon POF options for WSF would include:

- Continuing service after investing in more suitable vessels to replace the Skagit and Kalama, utilizing a smaller (149-passenger) vessel to improve the economics of the service.
- Leaving the POF business, limiting WSF service Seattle to the Vashon market to the Fauntleroy-Vashon passenger-vehicle route.
- Allowing the Vashon market to be served by a new public sector operator, such as King County. At the direction of the King County Council, the County is currently engaged in a *Waterborne Transit Policy Study* to assess under what conditions it may be appropriate for King County to provide Seattle-Vashon POF service. This study, which will be completed in 2005, is consistent with earlier legislative requests [HB 2474, Section 223(6)] to study the potential for private or public partners to provide POF service to Puget Sound communities.

Near-Term Implementation Plan for the 2005-07 Biennium

In the 2005-07 biennium approximately $3.0 million in capital funding will be required to implement a South Sound POF Triangle route: $1.2 million for Chinook and Snohomish vessel start-up costs and $1.8 million for Southworth and Vashon terminal improvements. These investments are sufficient to support initial POF operations with service provided by a single vessel operating in two 4-hour periods, to serve morning and evening peak demand.

Required terminal improvements are:

Southworth: Modify existing wingwalls to vehicle slips and construct a mooring dolphin. (Cost estimate: $1 million)

Vashon: Upgrade POF tie-up by adding a raised landing platform on the existing float and constructing a mooring dolphin and fender to accommodate the larger 350-passenger vessels. (Cost estimate: $800,000)

Additional Proviso Sections

Non-Operating Revenue-Generating Initiatives. WSF is pursuing a variety of opportunities to generate revenues through concession sales at its terminals. Attachment F summarizes these plans by terminal, including terminals in downtown Seattle, Anacortes, Bainbridge Island, Clinton, Edmonds, Southworth and Sidney, B.C.

San Juan Island Fare Equity. The proviso's request for "a more equitable fare structure for the San Juan Islands, particularly for island residents" was brought to WSF's long-standing Tariff Policy Committee for discussion and recommendations. The Committee recommended that WSF maintain the current fare structure in the San Juan Islands at this time, given the Committee's perspective that the basis for these fares is consistent with overall Ferry System policies and has been refined to reflect the unique nature of the Islands. The Committee agreed to review the possibility of increasing the spread between cash and frequent user fares in the next tariff cycle, expected to be in 2005. Analysis of this issue is contained in a stand-alone Appendix to this report: *San Juan Island Fare Equity Assessment.*

WASHINGTON STATE FERRIES
VISION AND TEN-YEAR PASSENGER STRATEGY FOR WASHINGTON'S MULTIMODAL FERRY TRANSPORTATION SYSTEM

CONTENTS

ATTACHMENTS

WASHINGTON STATE FERRIES
VISION AND TEN-YEAR PASSENGER STRATEGY FOR WASHINGTON'S MULTIMODAL FERRY TRANSPORTATION SYSTEM

1.0 INTRODUCTION, PROJECT PURPOSE AND APPROACH

1.1 Background: A Legislative Proviso Has Guided this Study

The 2004 Legislature enacted a proviso [ESHB 2474, Section 506] focused on the creation of a coordinated, integrated marine and landside multimodal transportation system to connect the state's people, jobs and communities. To achieve this objective, the proviso calls for a long-range plan and supporting strategy that will provide "policy guidance to define and maximize efficient delivery of quality marine transportation service to the traveling public." The proviso further charges that the strategy identify "the most appropriate means of moving foot passengers across central Puget Sound," using Washington State Ferries (WSF) vessels, alternative operators, or a hybrid combination of both, in the short and longer-term.

The full text of the proviso is contained in Attachment A. This proviso follows on previous legislative requests [HB 2474, Section 223(6)] to study the potential for private or public partners to provide passenger-only ferry (POF) service to Puget Sound communities.

The proviso states that the strategy should focus on the "most likely routes for near term passenger ferry service, particularly Vashon, Kingston, Southworth, and Clinton," and that consideration be given to:

- Existing public-private partnership opportunities for operations and/or funding.
- The impacts of alternative service structures on development options for Colman Dock's redevelopment as a major transportation hub.
- An evaluation of how "operating economies and reasonable farebox recoveries" can be achieved by scheduling morning and afternoon peak services "to match commuter demand and to fit within existing collective bargaining agreements as interpreted and applied to facilitate split-shift, transit-like operations."
- A vessel plan that most efficiently uses existing and potential additional WSF vessels.
- Recommendations for the most effective use of federal funding opportunities for integrated passenger ferry service in the Central Puget Sound.
- A near-term implementation plan for the 2005-07 biennium.

In addition, the proviso calls for:

- Consultation between WSF and key stakeholders, including business, labor, environmentalists, local governments and transit agencies in developing the strategy. Attachment B is a roster of stakeholders consulted and Attachment C contains summaries of the two stakeholder meetings held.
- A long-term plan for the Ferry System's existing terminals considering revenue-generating opportunities and potential partnerships with the private sector, including a plan for generating non-operating revenues. (Attachment F).
- A more equitable fare structure for the San Juan Islands, especially for Island residents. This issue is analyzed in a stand-alone Appendix to this report: *San Juan Island Fare Equity Assessment.*

1.2 Study Scope

This study was prepared for the 2005 Legislature, in response to the proviso to ESHB 2474. The study focuses on the routes identified in the proviso: Seattle-Vashon, Seattle-Southworth, Seattle-Kingston and Seattle-Clinton. Analysis of the Seattle-Bremerton route was not included in the proviso; this was a question raised by the stakeholder group. In light of the successful launch of the public private operation on this route it was decided to follow the original legislative direction and exclude the Seattle-Bremerton POF from this analysis. Likewise, analysis of POF environmental issues is outside the study's scope. The study does encompass consideration of potential POF route options on WSF's downtown Seattle and Fauntleroy terminals. However, consideration of specific landside transportation issues is outside the study's scope; these issues will be explored in the agency's Long Rang Strategic Plan update, to be completed in 2005.

1.3 Research and Analytical Tasks Conducted

The study encompassed multiple activities: outreach, research, ridership analysis, vessel and facility assessments, financial modeling and analysis of alternative service structures. Key activities included:

Background Research, Stakeholder Perspectives, and Current Situation Assessment

- Interested stakeholders representing business, labor, the environmental community, local governments and transit agencies were identified and contacted to participate in the study. Interviews with 25 stakeholders were conducted, with topics encompassing POF possibilities, relevant history, stakeholder concerns and perspectives about key POF considerations and opportunities.
- Two stakeholder meetings were held, one in Seattle in which stakeholders shared perspectives on Puget Sound POF service needs and issues, and one in Bremerton in which participants reviewed and discussed preliminary findings regarding route options, ridership, service characteristics, and on-the-water cost recovery rates.
- WSF's POF history and recent POF legislative history were reviewed.
- Kitsap Transit's POF planning efforts and operating agreements to-date were reviewed, including current and planned POF private operations at Bremerton, Kingston and South Kitsap.
- WSF's current and planned multimodal facilities and POF vessels were assessed.
- Terminal constraints and issues at Colman Dock and Fauntleroy Dock were assessed.
- A comparative agency survey was conducted. Six POF systems around the nation and six transit systems in the region were surveyed by telephone to determine comparative cost recovery rates, management practices and other key operating system characteristics.

Ridership, Market Analysis and the Economics of POF Service

- Total Puget Sound passenger ridership and capacity was analyzed, including walk-ons carried on WSF's passenger-vehicle ferries as well as POF service.
- Walk-on passenger capacity in 2010 and 2015 on WSF's passenger-vehicle ferries was modeled for the 4-hour P.M. peak period and for a 1-hour "peak of the peak" period.
- Ridership forecasts were prepared for the service area for 2010 and 2015.
- Estimates of the effects of WSF riders switching from passenger-vehicle ferry to POF routes were modeled. The potential for new, induced POF demand by route was also analyzed.
- An assessment and mapping of transit and rail service connections to the Ferry terminals under study was prepared.
- The economics of POF service were analyzed, including the importance of matching service provided to peak periods of ridership through the use of split shifts.

Financial Analysis of Alternative Service Structures

- Route-specific analysis for direct service between Seattle-Clinton, Seattle-Kingston, Seattle-Southworth, Seattle-Vashon, and Seattle-Vashon-Southworth was modeled, including a summary of ridership and cost recovery findings by route.
- An assessment of the financial impact on WSF of other operators providing services in the same markets was conducted.

Assessment of WSF Options

- An assessment of current WSF POF vessels in terms of condition, operating requirements and, for the Chinook and Snohomish, costs to restore service was developed.
- Assessment of terminal requirements and cost estimates to accommodate new POF service were prepared by WSF and summarized in the report.
- A financial and funding analysis was conducted, including capital and operating requirements for WSF participation in expanded POF service options.

Vision, Ten-Year Strategy and Implementation Analysis

- A WSF South Sound POF Triangle service option was defined and implementation issues identified.
- Financial and funding implications of expanded WSF service in the South Sound were analyzed, including the financial implications to WSF of public-private service in the South Sound.

Non-Operating Revenue-Generating Initiatives

- WSF's plan to generate non-operating revenues at its terminals was summarized, including a brief review of plans for concessions at its terminals in downtown Seattle, Anacortes, Bainbridge Island, Clinton, Edmonds, Southworth and Sidney, B.C.

San Juan Island Fare Equity

- The proviso's request for "a more equitable fare structure for the San Juan Islands, particularly for island residents" was addressed through WSF's Tariff Policy Committee and is summarized in a stand-alone Appendix to this report: *San Juan Island Fare Equity Assessment.*
- The Committee recommended that WSF maintain the current fare structure in the San Juan Islands, given that its basis is consistent with overall Ferry System policies and has been refined to reflect the Islands' unique nature. The Committee agreed to review the possibility of increasing the spread between cash and frequent user fares in the next tariff cycle, expected to occur in 2005.

1.4 Study Definitions

A number of terms are used throughout this report:

- "Passenger-vehicle" ferries are WSF's large vessels which carry vehicles, passengers in vehicles, bicycles, freight, and walk-on passengers.
- "Passenger-only" ferries carry only walk-on riders and a limited number of bicycles.
- "Public-private option" refers to privately-operated POF service provided in collaboration with a Public Transportation Benefit District (PTBA), in this case Kitsap Transit.
- "Seattle-Southworth" is the potential POF route that WSF could operate.
- "Seattle-South Kitsap" is the POF route that Kitsap Transit is planning, with operations provided by a private firm.
- The "South Sound POF Triangle" is a WSF route option connecting Seattle-Vashon-Southworth that is analyzed in this report.
- The "Fauntleroy-Vashon-Southworth triangle route" is WSF's current passenger-vehicle ferry service along that corridor.
- "Switching" riders are existing ferry passengers drawn to new POF routes from existing passenger-only and passenger-vehicle ferry routes.
- "Induced" riders are passengers who are new to the System, and would not otherwise ride the ferries.
- A "pro forma" is a financial analysis of options, based on various operating, ridership and fare assumptions.

1.5 Report Organization

The balance of this report documents the analysis conducted. The report is organized into the following sections:

- History of Puget Sound POF Service
- Strategic Context and Situation Assessment
- Passenger Ferry Ridership Demand and Capacity Analysis
- The Economics of POF Service
- Route-by-Route POF Operational Assessment
- Options to Serve the South Sound POF Market
- Conclusion: Ten-Year Strategy and Implementation Plan

2.0 HISTORY OF PUGET SOUND POF SERVICE

2.1 POF Background: Policy Planning and Initial Service

The Beginnings of WSF's POF Service. WSF's history of providing POF service began in 1985 with the development of WSF's *Long Range Plan Update 1990-2000*. The Plan identified POF service between Seattle and Bremerton, Vashon and Southworth as a way to accommodate future demand without investing in additional passenger-vehicle ferries. Seattle-Bremerton POF service was initiated in 1986, then cancelled in 1989 due to budget constraints. That service was provided by the Tyee, a used 319-passenger, 23-knot catamaran. In 1990, service resumed on the Bremerton and Vashon routes with WSF's acquisition of the Skagit and Kalama. Also in 1990, a private operator provided POF service on a Seattle-Kingston-Port Townsend route, using a 49-passenger vessel. However, this service lasted for only one season.

The 1993 POF Implementation Plan Approved by the Transportation Commission Endorsed and Expanded POF Service. In 1993 the State Transportation Commission sponsored a study of POF service in the Puget Sound. At the time, the State was providing POF service from Seattle-Bremerton and Seattle-Vashon, and several private operators were interested in providing service on other routes.

The *POF Implementation Plan*, which was unanimously adopted by the Transportation Commission in December 1993, called for a new paradigm of expanded and more reliable POF service across Puget Sound. The Plan recommended new Seattle-Kingston and Seattle-Southworth service (with two new vessels for each route), and improved POF service for Bremerton (with two new vessels) and Seattle-Vashon (with one new vessel). While the State had previously purchased POF vessels that were not especially well suited or comfortable for the Cross Sound trip, the Plan recommended new 350-passenger fast ferries with bow-loading features. Construction of new POF terminals at Kingston and Southworth was also planned, along with POF terminal improvements at Colman Dock.

Referendum 49 Provided Funding for the POF Implementation Plan. In 1998 the state's voters approved Referendum 49. The Referendum provided a funding source for an expanded POF program by allowing the State to bond against motor vehicle excise (MVET) revenues. WSF responded by planning for five new POF vessels and began the design process for POF terminal facilities at Southworth and Kingston. In 1998 the State took delivery of the first of these vessels, the Chinook; the Snohomish was delivered in 1999.

2.2 Funding Challenges and Impacts on POF Service

Initiative 695 (I-695) Created a Capital and Operating Crunch, which Affected POF Service and Capital Planning. In 1999 voters approved I-695, significantly reducing MVET funding for the Ferry System. In response, the agency was required to make service cuts and to halt large portions of its capital program. Design and engineering of the POF terminals at Southworth and Kingston was put on hold and eventually discontinued. POF service was also affected. In 2000 Seattle-Bremerton and Seattle-Vashon POF service was reduced to weekday-only in an effort to make the service more cost-effective.

A Legislative Task Force Reviewed Options for Providing Existing and Expanded POF Service. In 2000 a Joint Legislative Task Force on Ferry Funding (JTFF) was formed to assess WSF's financial situation and report back to the Legislature. A number of POF stakeholders were members of the Task Force, and many hours were spent considering the best POF options for the State given its

challenging financial situation. The JTFF report stated that WSF should no longer consider expanded POF service to new communities, though Seattle-Bremerton and Seattle-Vashon POF service should continue on a weekday-only basis. The report also recommended that the Legislature remove barriers to privately-provided POF service. This recommendation provided the policy foundation for subsequent legislative action in 2003.

The Referendum 51 (R-51) Gas Tax Proposal Would Have Funded New POF Service, but Failed at the Ballot. In 2002, R-51 was placed before the voters. The measure would have provided for one-boat POF service for both the Seattle-Kingston and Seattle-Southworth routes. WSF's plan was to purchase two used vessels and begin service on these routes in as cost-effective a manner as possible. However, R-51 was not approved by voters and WSF responded by working to reduce the agency's operating costs. As part of this effort, WSF staff proposed to the State Transportation Commission that the Seattle-Bremerton and Seattle-Vashon POF routes be eliminated. The Transportation Commission in turn proposed eliminating the routes to the 2003 Legislature.

2.3 Legislative Policy Direction

The 2003 Legislature Took Action: Vashon Service was Continued and ESHB 1853 Provided Opportunities for Locally-Sponsored POF Service. The 2003 Legislature approved elimination of Seattle-Bremerton POF service while Seattle-Vashon POF service was funded through 2005. While funding for Seattle-Vashon POF service is included in WSF's 10-Year Plan, no capital funding has been identified for replacement of the aging vessels serving the route, the Skagit and Kalama.

In 2003 the Legislature also unanimously approved ESHB 1853. Among other provisions, this Bill authorized PTBAs to develop POF investment plans to operate or contract for the operation of POF services, and to purchase, lease or rent ferry vessels and docks to facilitate provision of POF service. PTBAs were also authorized to go to the voters to request tax increases to fund the POF service plan. The State Utilities and Transportation Commission (UTC), which regulates privately provided ferry transportation service, was instructed to require potential private operators to obtain approval for their UTC applications from the PTBA or ferry district serving that county. This provision is in effect until March 2005.

ESHB 1853 also granted an exemption to the long-standing Ten-Mile Rule for POF operators. The Ten-Mile Rule, which prevents private operators from maintaining or operating a ferry crossing within ten miles of either end of an existing Washington State Department of Transportation (WSDOT) ferry crossing, is still in effect for movement of vehicles and freight.

2.4 Kitsap County POF Planning and Funding

Kitsap County Leaders Formed an Association to Develop New Integrated POF Service. Following passage of ESHB 1853, a group of Kitsap County leaders joined together to create the Marine Transportation Association of Kitsap (MTAK). This organization was founded on the premise that Kitsap County needs responsive, sustainable and cost-effective POF service, which people can rely on when making business location and housing decisions. The group believes that POF service should be understood as akin to a land-based transit system, and that such service can best be provided through public-private partnerships between local transit agencies and private operators, acting in the interests of the communities to be served.

Kitsap Transit Has Taken a Leadership Role in the Development of New POF Service. Acting under the provisions of ESHB 1853, Kitsap Transit stepped forward with a plan to develop POF service to and from three Kitsap terminals: North (Kingston), Central (Bremerton) and South Kitsap. The agency's plans call for the public sector, led by Kitsap Transit, to construct shore-side facilities, acquire vessels and provide for integrated transit service to complement and connect with the POF service.

Kitsap Transit's Sales Tax Initiative was Crafted But Defeated by County Voters. In 2003, after a year's work, Kitsap Transit asked County voters for a tax increase of an additional 1/10 of a percent of sales tax revenue to support expanded and locally-funded POF service. However, the measure was defeated by voters by a 62-38% margin.

Kitsap Transit then turned to its Plan B. (The agency termed its service and terminal plan with the voter-approved sales tax revenue "Plan A." "Plan B" is the organization's plan to support local POF service without that funding.) This plan calls for Kitsap Transit to enter into Joint Development Agreements with private ferry operators to operate the POF service. Service will start with peak-hour sailings at fares approved by the UTC. Kitsap Transit will consent to the operators' UTC certificate applications, and will work to obtain federal and state funding for terminal facilities and boats. These assets will be made available to private operators, with the agency retaining ownership. Kitsap Transit will also work to obtain future operating assistance from local or regional funding sources, and will provide connecting bus service and supporting park-and-ride lot programs.

Kitsap Transit has Entered into Joint Development Agreements for Seattle-Bremerton and Seattle-Kingston POF Service. Kitsap Transit has a Joint Development Agreement with Kitsap Ferry Company LLC (Pacific Navigation) to provide Seattle-Bremerton POF service. The Company also operates Pierce County's ferry service, under contract with the County. The one-boat Bremerton POF service started August 1, 2004 and currently serves about 300 one-way passenger trips per day. The Company's business plan encourages purchases of ticket books and monthly passes, and the operator anticipates increasing ridership to about 900 one-way passenger trips, or 450 round trip riders per day. Fares are $7 one-way/full fare, $6 one-way with a 20-ticket book and $4 one-way per trip with a monthly pass.

Kitsap Transit also has a Joint Development Agreement with Aqua Express LLC to operate Seattle-Kingston POF service. This service started in January 2005. Aqua Express is a consortium comprised of Argosy Cruises, Clipper Navigation, Nichols Boat Builders and Tom Tougas, an Alaskan tour boat operator. Aqua Express will charge riders a one-way fare of $5.25 and will offer discount passes. Management expects to attract riders in part by emphasizing customer service. The Company anticipates ridership on the route of about 284,000 passengers per year, or roughly 1,100 total passenger trips per weekday, and the former WSF Tyee POF vessel has been purchased for this service. The service departs from Argosy's facility at Pier 56 in Seattle, and uses a new dock on property owned by the Port of Kingston on the West Side.

Kitsap Transit's POF Plan Includes Seattle-South Kitsap Service and the Agency is in Planning Mode. Kitsap Transit is in discussion with two competing operators regarding new Seattle-South Kitsap service. The agency will work with both operators to submit applications for certification for the UTC, with plans to enter into a Joint Development Agreement with the successful applicant. Kitsap Transit is working to begin service within 24 months; a dock must be constructed on the West Side before service can begin. The agency's plan is to run 149-passenger vessels on the route.

Kitsap Transit is Working to Obtain Federal Funding for the Service. As part of its plan, Kitsap Transit has been working to obtain federal funding support for vessels and terminals. The agency reports that it has requested or plans to request $6.0 million for federal FY 2005, including $2.5M for a 149-passenger boat for Seattle-Bremerton service; $2.0M for completion of the Bremerton Terminal and installation of a float; and $1.5M for planning, final design, engineering, right-of-way acquisition and some dock repairs for the South Kitsap terminal. In federal FY 2006, Kitsap Transit seeks $2.0M for construction of a shore-side bus terminal, traffic management improvements and the installation of a float. In federal FY 2007, $12.0M will be requested for the design-build acquisition of four 149-passenger ferries (assuming a cost of $3.0M each).

3.0 STRATEGIC CONTEXT AND SITUATION ASSESSMENT

3.1 Policy Context: State Transportation Policy Planning

WSDOT engages in a comprehensive planning process to define the state's transportation programs and investments for the next 20 years. The Washington Transportation Plan (WTP) will serve as a blueprint to guide the state's transportation investment choices and priorities. The WTP is organized around nine interrelated strategic themes: system preservation, system efficiencies, safety, transportation access, bottlenecks and chokepoints, economy and jobs, future visions, health and environment, and freight movement.

In tandem with the WTP process, WSF is updating its Long Range Strategic Plan, a process that includes evaluations of ridership demand and long-term service and facility needs and challenges. WSF's long range planning is being conducted in alignment with the WTP's strategic framework. This framework is based on an understanding that the state is operating in a constrained environment: "we can't afford to build all the projects we need." Given this situation, WSF's planning process focuses on identifying bottlenecks and chokepoints to maximize system capacity and throughput, and on system efficiencies to optimize current assets and facilities.

The Ten-Year Passenger Strategy is being developed in the context of the WTP process as well as WSF's Long Range Strategic Plan, both of which will be completed in 2005. The WTP's strategic framework provides a useful lens for considering current POF service and facility challenges.

3.2 Financial Context: WSF is a Financially Constrained Operating Entity

WSF faces a number of operating and financial constraints which provide an important backdrop in considering the State's appropriate role and capacity to provide POF service for the routes identified in the proviso. The agency has been operating under significant financial limitations since the Legislature reduced the Motor Vehicle Excise Tax to a flat $30 following passage of I-695. WSF lost approximately 20% of its operating support and 75% of its dedicated capital funding and had to use its reserve funds to backfill capital funding in the 1999-2001 biennium. In response, the agency has reduced services and raised fares in the last four years, in an effort to replace the lost operating support. One result of these initiatives, compounded by the effects of a regional recession, is that ridership has dropped to 1993 levels.

The organization's financial challenges are ongoing. A regional recession, ridership declines related in part to fare increases, and most recently, fuel cost spikes all contribute to those challenges.

3.3 Stakeholder Context: Perspectives on POF Service

The proviso called for outreach and consultation with key POF stakeholders as part of the strategy development process. Stakeholder outreach was an important element of the project: more than two dozen stakeholders were interviewed by telephone and in person, to obtain perspectives on the current situation and options for meeting the proviso's mandate. Attachment B shows a roster of stakeholders involved in the study.

Perspectives articulated in the interviews reflect the range of opinions and interests regarding expanded POF service, including the State's role. Regarding the question of how POF service should be provided going forward, stakeholders said:

- The State should not be in the POF business; it should stand aside and let private operators deliver the service.
- The State should go back to providing all POF service.
- The State may have a role in providing facilities for privately-operated POF service; all agencies should bring their tools together.
- The State should continue funding POF service to Vashon.
- The proviso should have included an assessment of Seattle-Bremerton POF service.
- Transit agencies/Public Transportation Benefit Districts should take the lead in providing POF service, and the State should help with funding.
- A regional agency – a Puget Sound-wide governing board – could help coordinate multi-county service. The service could include Snohomish, King, Kitsap, Jefferson, and Pierce Counties.

Stakeholder Meetings. In addition to the interviews conducted, two stakeholder meetings were held at key points in the process, one in Seattle and one in Bremerton. Summaries of these meetings are contained in Attachment C. The first meeting provided an opportunity for participants to share their thoughts and questions about POF needs and opportunities, and ideas about future passenger ferry service provision. The second stakeholder meeting, which came near the conclusion of the project, provided stakeholders with an opportunity to review and comment on preliminary technical analysis and findings.

Meeting attendees voiced a number of suggestions to broaden the preliminary analysis, many of which were incorporated into subsequent analytical modeling. These comments included suggestions to estimate induced demand (customers who would not otherwise ride the ferries) and to evaluate the scenarios assuming a broader mix of fare scenarios, vessel sizes and operating hours.

An overall theme expressed in the interviews and stakeholder meetings was the importance of the state developing a predictable, stable approach to POF service. Ferry community representatives noted that people need reliable, predictable service to make employment and housing decisions: POF service and funding need to be sustainable for the long term. Private ferry operators voiced a similar need for certainty: the state created opportunities for the private sector to enter the market in 2003 and it should now stay the course, allowing those operators to provide service.

3.4 Facility Context: Constraints, Bottlenecks and Chokepoints

Eagle Harbor Maintenance Facility. WSF's Eagle Harbor facility on Bainbridge Island has capacity for two POF vessels, and expansion of the existing facility is not possible. Without replacing or supplementing Eagle Harbor, POF service is limited to one route, since it is necessary to have two vessels available to serve any given route. Expansion of WSF's POF program will require the location and development of a new POF maintenance facility, similar to what was in place at Pier 46 when WSF was operating two passenger-only routes.

Vashon Island POF Service and Fauntleroy Dock Considerations. In 2000 Seattle-Vashon POF service was reduced to weekday-only, although service continues to be provided 16 hours per day, Monday-Friday. Funding to continue the service is identified in WSF's 10-Year Plan, however there is no commitment from the Legislature to fund the service beyond June 2005.

Seattle-Vashon service is provided by two aging vessels, the Skagit and Kalama, which are near the end of their useful lives and will need to be replaced within the next several years. There is no current capital plan for the replacement of these boats.

The Fauntleroy terminal presents another challenge for WSF: the facility is operating near capacity and cannot be expanded. Operationally, the facility has a number of shortcomings: there is only one slip, and because the holding area is too small vehicles queue in the adjacent residential area. The facility does not have room for priority loading and there is no overhead loading facility to separate pedestrians from vehicles. Moreover, ridership growth expected on the Fauntleroy-Vashon-Southworth passenger-vehicle route will result in additional traffic at this already congested terminal.

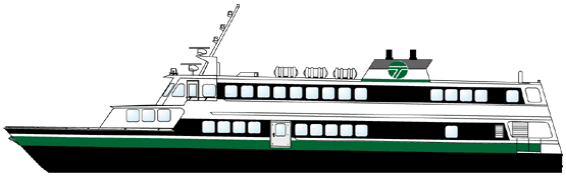
Colman Dock Situation and the City of Seattle's Interests. Another key constraint within the Ferry System is the downtown Seattle terminal at Colman Dock. Colman's passenger-vehicle capacity is constrained, with three vehicle slips. Likewise the POF dock can support only two routes. This is an important limit to WSF's service growth and a significant factor in considering additional State-provided POF service. WSF is currently involved in a comprehensive master planning and environmental review process for Colman Dock, in a collaborative effort with the City of Seattle.

The City is keenly interested in planning projects that affect Colman Dock, and is an active participant in WSF's POF and Long-Range Planning processes. Seattle's interests in Colman Dock planning include fitting the facility into the City's overall waterfront planning process, a multi-year urban design project.

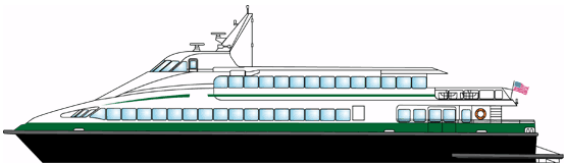
Seattle is also involved in its own major planning processes: the City is updating its Comprehensive Plan and its Five-Year Transportation Strategic Plan. The City's planning work is focused on accommodating transit trips in downtown and limiting new vehicle traffic in the area. The City would like to minimize the impacts of passenger-vehicle ferry traffic on pedestrians and on downtown traffic generally. The City is interested in understanding forecasted Ferry System ridership growth and would like to accommodate that growth through passenger walk-ons. A City objective is to develop a coordinated landside transportation system to enable riders to efficiently reach their final destination within the City. Toward that end, the City is interested in how terminal services will be coordinated on the waterfront if there are multiple ferry operators.

3.5 Vessel Context: WSF POF Vessel Assessment

Background. At end of FY 2003, with the POF program limited to Seattle-Vashon service, WSF retired and sold the oldest POF vessel in its fleet, the Tyee. The Tyee is a catamaran vessel, built in 1985 and rebuilt in 1993. This leaves WSF with four POF vessels: the Skagit and Kalama and the much newer Chinook and Snohomish.



Two Vessels are in Active Service: the Skagit and Kalama. These boats are 250-passenger aluminum monohull vessels built in 1989 and acquired in 1990 for $5.16M ($2.58M each) plus additional refurbishment costs to convert to WSF operating standards. The vessels take turns serving the Seattle-Vashon route; one is the main vessel, the other serves as a reserve boat. This one-to-one ratio (one operating vessel to one spare) is high, but helps provide service reliability. Both vessels have four diesel engines and operate at approximately 25 knots. Given the 20-year lifespan of an aluminum hulled vessel, these boats are close to the end of their useful life, and will need to be replaced after the 2007-09 biennium.



Two Newer Vessels are Inactive: the Chinook and Snohomish. The Chinook and Snohomish are 350-passenger boats built following the *Passenger-Only Ferry Implementation Plan*'s adoption by the Transportation Commission in 1993. They are double-hulled aluminum vessels, constructed at an approximate cost of $23M for both. The Chinook was built in 1998, the Snohomish in 1999. Both vessels have about a 20-year life span. The vessels were designed to travel up to 40 knots, and thus are known as passenger-only fast ferries.

Since September 2003 when Bremerton POF service was halted, the Chinook and Snohomish have been tied up and out of service. Maintenance and preservation funding for the vessels was halted at that time, and there has been limited maintenance performed on the vessels since then. The boats will require maintenance before they are again ready for service. The Chinook will also require retrofitting with a bow-loading kit, which is in WSF's inventory. The Snohomish is already outfitted for bow-loading.

Passenger-Only Fast Ferry Maintenance and Start-Up Costs. While both the Chinook and Snohomish would need to be dry docked and serviced before being put back into operation, the Chinook would require additional maintenance work. The Chinook's engines need to be overhauled at a cost of approximately $600,000; all four engines have logged approximately 9,000 service hours since their last overhaul, which is typically the maximum time between major service intervals. Likewise after 8,000 hours, the boat's jet pumps require servicing. The engines and jets on the Snohomish have logged approximately 3,000 hours since their last service.

Both vessels require the addition of Automated Information Systems (AIS), now required by the Coast Guard for all vessels. Costs for installation of the equipment on the Chinook will be somewhat higher than for the Snohomish, as the Chinook's radar system needs to be upgraded. Table 1 below summarizes estimated start-up costs necessary to bring the Chinook and Snohomish back into service. As Table 1 shows, total refurbishment costs for the two vessels are estimated at approximately $1.2 million.

Table 1
Vessel Refurbishment Costs to Bring the Chinook and Snohomish Back into Service

Preparation Costs for Existing Vessels	Chinook	Snohomish
Vessel preparation	$225,000	$225,000
Addition of Automated Information System (AIS)	$25,796	$11,896
Bow-loading retrofit	$75,000	$0
Overhaul Chinook engines	$600,000	$0
Subtotal by Vessel	**$925,796**	**$236,896**
Total		**$1,162,692**

Source: Washington State Ferries, 2004

Engine Issues. The engines in the Chinook and Snohomish are Detroit Diesel Series 16v149TI DDEC (model 9162-7K10 and 9162-7K11 for port and starboard configuration, respectively). The engine design is approximately 30 years old and is not in current production, having been discontinued by the manufacturer in 2000. While replacement parts are still available, the remaining supply of major rebuildable components is being depleted at 5% to 7% per year, according to the official rebuilder of this engine, Detroit Diesel Reliabuilt West. In a few years there may be difficulty finding repairable engine blocks and rebuildable cylinder heads.

Major Maintenance for Passenger-Only Fast Ferry Engines. Maintenance costs are correlated with the capacity at which the engine is operated: the higher the percentage of capacity, the higher the maintenance costs, as the maximum number of hours between service intervals is decreased. A reasonable schedule for major maintenance for the Chinook and Snohomish is shown in Table 2.

Table 2
Maintenance Schedule and Costs for Current POF Engines

Engines		
Hours until first in-frame overhaul after full overhaul	9,000	
In-frame overhaul cost		$160,000
Hours until next in-frame overhaul	7,500	
In-frame overhaul cost		$160,000
Hours until next full overhaul	7,500	
Full overhaul cost		$600,000
Total	**24,000**	**$920,000**
Water jets		
Hours between maintenance	10,000	
Rebuild water jets: 4 jets per vessel		$122,000
Rebuild cylinders: 16 cylinders per vessel; done in-house		$8,000
Total	**10,000**	**$122,000**

Source: Washington State Ferries, 2004

In addition to the engines in the Chinook and Snohomish, WSF has four spare engines that provide a change-out rotation, allowing four worn engines to be rebuilt and warehoused until the next vessel requires them. The Chinook currently has the four spare engines installed, which are at the 9,000 service hour limit. The Snohomish has the engines originally installed in the Chinook, which have been rebuilt. The original engines from the Snohomish are being held in a WSF warehouse; two have been rebuilt, two have not.

Engine Replacement Options. The engines are not optimal performers in terms of fuel efficiency, maintenance cycles and fuel emissions; performance on all of these parameters could be improved with an engine of a more modern design. "Repowering" the Chinook and Snohomish would entail replacing the existing engines with newer and better performing models. In recent years, a number of POF operators across the country have repowered vessels operating with this engine model. Newer engines would provide the following benefits:

- **Greater Fuel Efficiency.** The current engines are heavier than many modern equivalents, reducing fuel efficiency.
- **Lower Maintenance Costs.** Newer engines would require less frequent maintenance than existing engines. The existing engines require service every 9,000 hours; a POF engine that could operate for 15,000-20,000 hours between servicings would be more cost-effective. As a comparison, the passenger-vehicle ferry Wenatchee typically goes 35,000 hours between overhauls.
- **Greater Reliability.** Newer engines would presumably be less likely to break down than the current engines.
- **Reduced Emissions.** According to Detroit Diesel, engines of more modern design operate with lower fuel emissions.

The approximate cost of repowering would be $2.5 million per vessel. While efficiency and performance benefits of newer engines must be considered against this cost in the short-term, the fact that the existing engines are aging, with replacement parts becoming more difficult to find, means that the vessels will need to be repowered at some point within the 2005-2015 planning horizon.

New and Replacement Vessels. Given the performance issues with the POF engines and the likely need to replace them within the ten-year planning period, it is appropriate to consider, even at a broad level, approximate costs to replace the vessels entirely. Table 3 shows these approximate costs for both new and used vessels, by size of vessel. These numbers should be discussed with caution, however. As with any piece of machinery, vessel prices vary according to design, features and operating characteristics.

Table 3
Preliminary Cost Assessment for New POF Vessels

	New	Used
149-passenger	$5,000,000	$2,000,000
250-passenger	$9,000,000	$3,600,000
350-passenger	$11,000,000	$4,400,000

Source: Berk & Associates, 2004

4.0 PASSENGER FERRY RIDERSHIP DEMAND AND CAPACITY ANALYSIS

4.1 Introduction: Ferry Service is One Component of the Region's Multimodal Transportation System

Central Puget Sound residents, workers and visitors are served by a growing multimodal transportation system which encompasses bus, commuter rail, passenger-vehicle and passenger-only ferries. In recent years, the region has invested significantly in planning and developing an interconnected system of public transportation, including light rail, enhanced commuter rail and expanded bus services. Significant regionally-funded investments provide enhanced transit connectivity to and from WSF terminals.

In particular, the expansion of the north Sounder commuter rail line linking the Mukilteo and Edmonds ferry terminals with downtown Seattle provides a new and comfortable way to commute from Snohomish County to Seattle. Sound Transit Sounder commuter rail service operates between Everett, Edmonds and Seattle. The agency operates one southbound A.M. train and one northbound P.M. on this route, but has agreements with the Burlington Northern Santa Fe railroad to increase service to four trains by the end of 2007. The route could also potentially provide additional service if it is included in Sound Transit's second phase investment program.

WSF service is an essential and inter-linked element of this transportation network. As Exhibit 1 illustrates, transit service connections to and from Central Sound ferry terminals are provided by eight transit systems: King County Metro, Sound Transit Express, Kitsap Transit, Community Transit, Everett Transit, Pierce Transit, Mason Transit and Island Transit. A total of 69 transit routes connect to WSF terminals, facilitating multimodal Cross Sound foot traffic.

Passenger-Vehicle Boats Provide Significant Passenger Ferry Service. A starting point for assessing POF options for the Puget Sound is an understanding of the role that WSF's passenger-vehicle boats play in the region's multimodal transportation system. WSF is the nation's largest ferry system, providing 24 million passenger trips per year with a fleet of 28 boats. About 50% of these trips are commute-related: WSF is also the state's second largest provider of daily transit service.

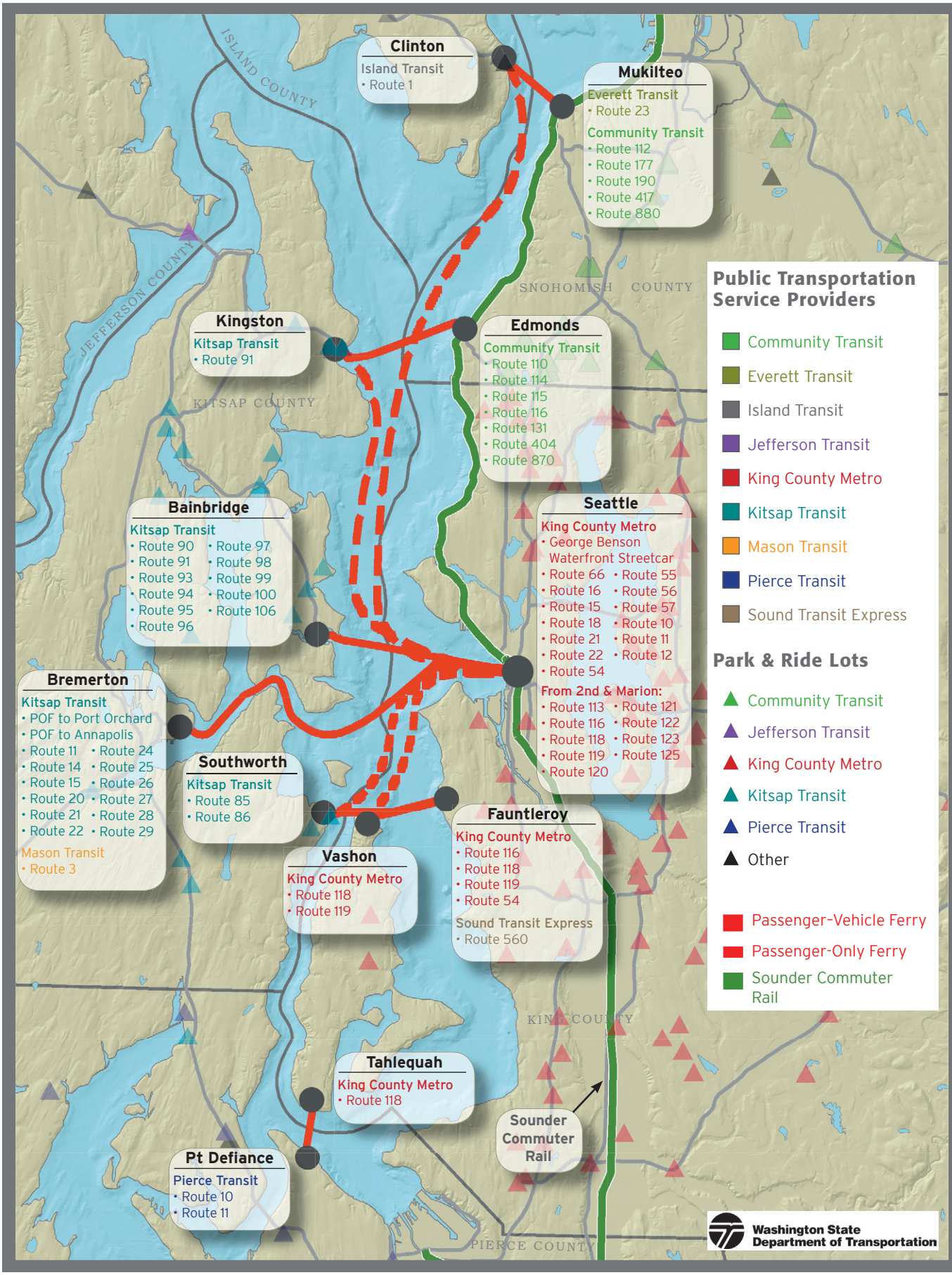
Table 4 presents a summary of total passenger walk-on trips provided by WSF on the Central Puget Sound routes in calendar year 2004. As the Table shows, in 2004 WSF carried more than 5.73 million foot passengers, of which about 194,000 or 3.4%, were transported on the Seattle-Vashon POF route. The balance, 5.54 million or 96.6% of total Puget Sound riders, traveled on WSF's passenger-vehicle ferries.

Table 4
2004 Central Puget Sound Walk-on Passenger Ridership, by Route

	Calendar Year 2004	Percent of Total
Seattle-Bainbridge	2,631,510	45.9%
Seattle-Bremerton	1,198,066	20.9%
Edmonds-Kingston	611,734	10.7%
Mukilteo-Clinton	528,584	9.2%
Fauntleroy-Vashon	349,353	6.1%
Seattle-Vashon POF	193,741	3.4%
Fauntleroy-Southworth	169,850	3.0%
Vashon-Southworth	48,486	0.8%
Total	**5,731,324**	**100.0%**

Source: Washington State Ferries, Berk & Associates, 2004

Exhibit 1
The Central Puget Sound's Integrated Multimodal Transportation System:
An Interconnected Network of Marine, Rail and Bus Systems



WSF's Passenger-Vehicle Ferries are High-Capacity People Movers. WSF's passenger-vehicle ferries serve as the high capacity link in the region's water-based transportation system – "trains on the water" – moving large numbers of foot passengers at a fraction of the cost per passenger that POF service can deliver. In fact, a Jumbo Mark II class ferry, such as those that serve the Seattle-Bainbridge route, can carry 2,500 passengers per trip – a carrying capacity the equivalent of 60 40-foot buses or 17 commuter rail cars. Moreover, the marginal cost of carrying passengers on WSF's passenger-vehicle boats is relatively low, and there is expected to be significant passenger-carrying capacity available on these vessels through the ten-year study period. Recognizing the cost-effectiveness of carrying walk-on riders on passenger-vehicle boats, in recent years WSF's new vessel investments have focused on expanding the region's foot-passenger ferry capacity. These capacity enhancements include acquisition of the Jumbo Mark II boats, which provided an additional 25% increase in passenger capacity over the vessels they replaced.

Planned terminal investments in the region are also focused on enhancing and facilitating HOV and multimodal connections between the ferry terminals and buses, monorail, commuter rail, light rail, and park and ride lots. More than $1 billion is expected to be invested in the Seattle, Edmonds, Bainbridge Island and Mukilteo ferry terminals in the next ten years. These investments will ensure the full passenger carrying capability of the passenger-vehicle ferries can be utilized on these routes.

4.2 Assessment of Demand and Capacity Needs Assuming Current Service

A key component of the analysis of potential need for new POF services is expected demand. Two components of demand were evaluated:

1. Potential for ferry riders to switch to one of the new POF routes; and
2. Potential for the new routes to attract new riders to the System (induced ridership).

Demand Projections with Current WSF Service Plan: Systemwide Growth is Projected. The first step in the demand analysis is to establish a baseline growth projection for the ten-year study period for all Ferry System ridership – vehicles and walk-on passengers. This "baseline analysis" of WSF ridership forecasts demand for WSF service by route. The analysis, which is prepared by Parsons Brinckerhoff, assumes continuation of WSF's current service plan with marginal capacity improvements, such as replacement of the Steel-Electric class of vessels. Baseline ridership forecasts also assume implementation of fare policy guidance in the Washington State Transportation Commission's ten-year financial plan.

Table 5 presents projected ridership demand to 2015 for the westbound P.M. peak period on WSF's Central Puget Sound routes, from Mukilteo-Clinton in the north to Point Defiance-Tahlequah in the south.

Table 5
Projected Systemwide Demand Based on Current WSF Service Plan
Total Daily Ridership
Westbound Peak 3:00 P.M.–7:00 P.M.

	2003	2010	2015	2003-15	Pct Chg.	Share
Point Defiance - Tahlequah	645	836	834	189	29%	2.7%
Southworth - Vashon	146	237	237	91	62%	1.3%
Fauntleroy - Vashon	1,858	2,371	2,417	559	30%	8.1%
Total Seattle-Vashon POF	413	759	823	410	99%	5.9%
Seattle - Vashon POF (Southworth)	*190*	*490*	*528*	338	178%	4.9%
Seattle - Vashon POF (Vashon)	*223*	*269*	*295*	72	32%	1.0%
Fauntleroy - Southworth	939	1,299	1,402	463	49%	6.7%
Seattle - Bremerton	2,451	3,180	3,523	1,072	44%	15.5%
Seattle - Bainbridge Island	6,676	8,276	9,160	2,484	37%	35.8%
Edmonds - Kingston	3,015	3,685	3,661	646	21%	9.3%
Mukilteo - Clinton	3,479	4,203	4,503	1,024	29%	14.8%
Total Central Puget Sound	19,622	24,846	26,559	6,937	35%	100.0%

Source: Washington State Ferries, Parsons Brinckerhoff, Berk & Associates, 2004

The ridership analysis summarized in Table 5 shows projected overall growth of 35% by 2015, an increase of about 7,000 peak period ferry trips on Central Puget Sound routes. Of this growth, 60% will be in the Central Kitsap travel shed – the Seattle-Bainbridge, Seattle-Bremerton and Seattle-Southworth routes. Within that travel shed, the Seattle-Bainbridge route is forecasted to attract the largest share of the ridership increase, with a 36% share of total growth (2,484 new riders). The Seattle-Bremerton route has the next largest share of projected growth at 16% of the total (1,072 new riders).

Peak period demand for South Kitsap to Seattle passenger trips is expected to increase by approximately 800 trips over the next decade, an increase of 71%. Of these trips, 42% would be transferring on Vashon to take the POF service to downtown Seattle. Only about 16% of today's traffic from South Kitsap to downtown Seattle or Fauntleroy follows that pattern, suggesting an expected shift toward downtown Seattle destinations from the South Kitsap area.

Demand Projections for Foot Passengers Only. Table 6 focuses on projected walk-on ridership growth in the Central Puget Sound region under WSF's current service plan.

Table 6
Projected Systemwide Demand Based on Current WSF Service Plan
Walk-on Trips
Westbound Peak 3:00 P.M.-7:00 P.M.

	2003	2010	2015	2003-15	Pct Chg.	Share
Point Defiance - Tahlequah	58	151	141	83	144%	1.6%
Southworth - Vashon	12	27	28	16	130%	0.3%
Fauntleroy - Vashon	247	417	454	207	84%	4.0%
Total Seattle-Vashon POF	413	759	823	410	99%	8.0%
Seattle - Vashon POF (Southworth)	*190*	*490*	*528*	338	178%	6.6%
Seattle - Vashon POF (Vashon)	*223*	*269*	*295*	72	32%	1.4%
Fauntleroy - Southworth	151	309	347	196	130%	3.8%
Seattle - Bremerton	1,519	2,194	2,453	934	61%	18.2%
Seattle - Bainbridge Island	3,045	4,703	5,366	2,321	76%	45.3%
Edmonds - Kingston	480	896	859	379	79%	7.4%
Mukilteo - Clinton	529	920	1,104	575	109%	11.2%
Total Central Puget Sound	6,454	10,375	11,575	5,121	79%	100.0%

Source: Washington State Ferries, Parsons Brinckerhoff, Berk & Associates, 2004

The walk-on demand analysis shows:

- Of the total Systemwide growth in the region's westbound P.M. peak, 74% is expected to come from the walk-on segment. This is primarily due to the constrained vehicle capacity on many of these routes, suggesting that a greater share of future trips will be made using the interconnected multimodal system.
- In all, westbound walk-on ridership during the P.M. peak is expected to increase by 80%, more than twice the growth rate for overall ridership growth in the region.
- The Seattle-Bainbridge and Seattle-Bremerton routes are expected to account for 63% of the new walk-on riders. These routes currently account for 70% of walk-ons in the Central Puget Sound region, suggesting that the overall concentration of walk-on activity will remain on these routes for the foreseeable future.
- The largest percentage growth in ridership is expected on the Seattle-Vashon POF service, which is projected to double in the next ten years, adding 410 riders in the P.M. peak westbound direction. This growth is driven primarily by demand from Southworth passengers transferring at Vashon to the Seattle-Vashon POF service. While the total number of new trips is not large in comparison with other routes, it is enough to overwhelm the available capacity on this route.

Assessment of Passenger Capacity Needs. A key element in the demand assessment is the potential for the current system—including passenger-vehicle and passenger-only service—to accommodate expected ridership growth. Table 7 presents a comparison of the projected peak period demand for each of the current WSF routes in the Central Sound region and the ability of the system to meet that need. The Table shows estimated percentage vessel utilization by route and estimated unused capacity by route, over the 4-hour P.M. peak period and for the westbound direction only. Capacity is based on Coast Guard certification for the vessels assumed on each route.

Table 7
Estimated Vessel Utilization and Unused Capacity: Central Puget Sound Routes
Westbound Peak 3:00 P.M.-7:00 P.M.

	Vessel Utilization (4-hour)			Unused Capacity (4-hour)		
	2003	2010	2015	2003	2010	2015
Point Defiance - Tahlequah	25%	15%	15%	1,976	4,636	4,638
Southworth - Vashon	4%	7%	7%	3,103	3,295	3,295
Fauntleroy - Vashon	33%	38%	39%	3,796	3,869	3,823
Total Seattle-Vashon POF	59%	109%	118%	285	-61	-125
Seattle - Vashon POF (Southworth)	*54%*	*140%*	*151%*	159	-141	-179
Seattle - Vashon POF (Vashon)	*64%*	*77%*	*84%*	126	80	54
Fauntleroy - Southworth	50%	52%	56%	955	1,221	1,118
Seattle - Bremerton	61%	52%	57%	1,549	2,986	2,644
Seattle - Bainbridge Island	53%	66%	73%	5,824	4,224	3,340
Edmonds - Kingston	22%	27%	27%	10,485	9,815	9,839
Mukilteo - Clinton	36%	44%	47%	6,121	5,397	5,097
Total Central Puget Sound	37%	41%	44%	34,093	35,382	33,669

Note: Capacity and utilization based on certified vessel capacity. Seating capacity may be less.

Source: Washington State Ferries, Berk & Associates, 2004

Key findings from the utilization and capacity analysis are:

- The Seattle-Vashon POF route is the only route that appears to have capacity limitations throughout the 4-hour P.M. peak period. By 2010, this route is forecasted to be over capacity during the peak period. Dividing the route's capacity equally between the Vashon and Southworth markets suggests that there is excess capacity to meet the Vashon needs, but growth in the Southworth market is more than enough to use up the capacity.
- The next most utilized route is Seattle-Bainbridge, which is expected to grow from approximately 50% utilization over the 4-hour period to almost 75% by 2015.
- All the other routes in the Central Puget Sound region remain at less than 60% utilization during the peak 4-hour period.

Three important factors must be understood to put the previous analysis in its appropriate context:

1. **Capacity Increases from New Vessel Acquisition.** Some increase in capacity is expected on the Point Defiance-Tahlequah, Southworth-Vashon-Fauntleroy and Seattle-Bremerton routes. These capacity increases relate to replacement of the Steel-Electric class vessels, allowing for larger vessels to be added to these routes. This capacity effect is reflected in ridership on the Point Defiance-Tahlequah route, which is expected see an increase of about 30% in peak period demand, while average utilization is estimated drop from 25% to 15%.

2. **Time of Day Matters.** A second significant factor is the period of analysis. Looking at a full 4-hour peak period does not provide a complete picture of the most congested period of the day. Even within the peak westbound commute time of 3:00 P.M.-7:00 P.M., there is a clear peak at 5:00 P.M. Approximately 40% of the 4-hour demand is trying to get on the ferry at this time. Ridership estimates at the peak of the peak suggest that the Seattle-Bainbridge route will begin to see individual sailings exceed capacity, even though there is enough total capacity to move all riders within the full 4-hour period. This will result in overloads on certain sailings, which will gradually be cleared out before the end of the peak period.

3. **Seasonality Considerations.** Seasonality impacts will result in periods of the year where utilization will be higher as well as lower. For demand estimation purposes, the analysis is conducted using demand in the month of May, which is a reasonable proxy for an average travel demand period and is appropriate for long-range capital planning purposes. An analysis using August would show higher utilization rates, but a long-range plan based on this level of travel would result in significant overbuilding and vessels that operate at much lower utilization rates for most of the year.

4.3 Analysis and Implications of Adding New POF Service

Introduction and Key Assumptions. In this section, current WSF service conditions were modified to analyze the impacts of direct POF service to the four West Side routes specified in the proviso. Operating assumptions for service on these routes are:

- Headways in the peak period would be 45 minutes for the Kingston and Southworth routes, 75 minutes for Clinton, 85 minutes for Seattle-Vashon, 85 minutes for Seattle-Vashon-Southworth.
- Crossing times, assuming a 32 knot vessel, would be the following:
  - Seattle-Southworth: 25 minutes
  - Seattle-Vashon: 25 minutes
  - Seattle-Kingston: 35 minutes
  - Seattle-Clinton: 60 minutes
  - Vashon-Southworth leg of the Seattle-Vashon-Southworth triangle: 10 minutes
- Average fares were assumed to be equal to 1.5 times the Central Sound average passenger fare (approximately $0.50 more each way as compared to current POF fares).

Market Demand for New POF Service. The primary market for new direct POF routes will be current ferry riders for whom the new services are an improvement over their current options. Table 8 presents estimated ridership on these POF routes assuming only the current base of ferry riders.

Table 8
Ridership Analysis for POF Routes:
Estimated WSF Riders Switching to a POF Route
Westbound Peak 3:00 P.M.-7:00 P.M.

	2003	2010	2015
Seattle-Clinton	N/A	90	136
Seattle-Kingston	N/A	854	978
Seattle-Vashon	413*	264	299
Seattle-Southworth	N/A	1,463	1,628
Seattle-Vashon-Southworth	N/A	1,101	1,341

* 2003 total includes passengers switching from the Vashon-Southworth passenger-vehicle ferry.

Source: Washington State Ferries, Berk & Associates, 2004

The ridership analysis shows:

- Ridership demand for a Seattle-Clinton route is very low – 136 passengers in 2015. This level of demand is too low to make the service viable.
- Seattle-Southworth (1,628 riders) and Seattle-Kingston (978 riders) are estimated to draw a significant number of ferry riders to these new routes by 2010 and 2015.
- Once Seattle-Southworth direct service is offered, Seattle-Vashon ridership will drop as the Southworth transfers switch to the new direct route, leaving a smaller base for the Seattle-Vashon service. The growth in Vashon ridership is expected to be modest; without riders from Southworth, total demand would not be expected to return to current ridership levels during the ten-year planning period.
- The limited Vashon market suggests that without Southworth riders, there is a question about the long-term viability of direct Seattle-Vashon POF service, at least at the service coverage and capacity provided today.
- A Seattle-Vashon-Southworth POF Triangle route would allow for continued service to Vashon, while providing better service to the growing South Kitsap market. This would attract a significant share of the expected Southworth demand, even without direct service.

Source of New POF Ridership. The majority of riders on new POF routes will be drawn from WSF's passenger-vehicle ferries. Table 9 shows from which routes the expected POF riders would be switching. In 2010, Seattle-Kingston POF ridership appears to draw approximately two-thirds of its ridership from the Seattle-Bainbridge passenger-vehicle route, with the balance coming from the Edmonds-Kingston passenger-vehicle route.

Over time, this trend increases: by 2015 70% of switching riders will come from Seattle-Bainbridge and 30% from the Edmonds-Kingston route. The Seattle-Southworth route is expected to draw significant ridership from the existing Seattle-Vashon POF, Fauntleroy-Southworth and Seattle-Bremerton passenger-vehicle services.

Table 9
Analysis of Riders Switching from Current WSF Routes:
Source of Westbound P.M. Peak POF Ridership

	2003	2010	2015	2020
Seattle-Clinton POF	**n/a**	**90**	**136**	**183**
Clinton-Mukilteo		100%	100%	100%
Seattle-Kingston	**n/a**	**854**	**978**	**1,103**
Edmonds - Kingston		32%	30%	28%
Seattle - Bainbridge Island		68%	70%	72%
Seattle-Vashon (Direct)	**413**	**264**	**299**	**335**
Baseline Seattle-Vashon demand	54%	100%	100%	100%
Transfers from Southworth	46%	0%	0%	0%
Seattle-Southworth (Direct)	**n/a**	**1,463**	**1,628**	**1,792**
Baseline (riding on Seattle-Vashon)		34%	32%	31%
Fauntleroy-Southworth		17%	23%	28%
Seattle-Bremerton		39%	37%	35%
Seattle-Bainbridge		11%	8%	6%
Seattle-Vashon-Southworth (Triangle)	**n/a**	**1,101**	**1,341**	**1,581**
Baseline (riding on Seattle-Vashon)		72%	69%	62%
Fauntleroy-Southworth		20%	31%	38%
Seattle-Bremerton		8%	0%	0%

Source: Washington State Ferries, Berk & Associates, 2004

Potential for Induced Ridership: Methodology and Findings. In addition to the riders expected to switch from the passenger-vehicle ferries, the introduction of new routes is likely to create demand from non-ferry riders. This component of demand is called induced demand. Table 10 presents the estimated total westbound P.M. peak ridership for the POF routes, including riders switching from WSF passenger-vehicles routes and assuming a 20% increase in ridership for induced trips.

Table 10
Total Estimated POF Route Demand
Riders Switching from Current WSF Routes Plus Induced Ridership
Westbound Peak 3:00 P.M.-7:00 P.M.

	2003	2010	2015	2020
Seattle-Clinton	N/A	108	164	219
Seattle-Kingston	N/A	1,024	1,174	1,324
Seattle-Vashon	413*	264	299	335
Seattle-Southworth	N/A	1,756	1,953	2,150
Seattle-Vashon-Southworth	N/A	1,265	1,553	1,841

* 2003 total includes passengers who transferred from Vashon-Southworth passenger-vehicle ferry.

Source: Washington State Ferries, Berk & Associates, 2004

The 20% factor for induced trips is based on the Seattle-Bremerton POF route experience when the high-speed vessels were put into service, and on survey data from the Seattle-Vashon POF service in the early 1990s. Table 11 presents the analysis of the Seattle-Bremerton POF experience. Ridership in 1997, the last year of service before the introduction of the new vessels, is compared with ridership levels in 2001, the last year before large fare increases and reduced service were implemented.

Table 11
Assessment of Potential for Induced POF Ridership

		FY 1997	FY 2001	Adj 2001*	Change
Seattle-Bainbridge	Pass	4,492,000	4,805,000	4,276,381	(215,619)
	Vehicle	2,246,000	2,335,000	2,078,117	(167,883)
Fauntleroy-Southworth	Pass	392,954	437,027	388,948	(4,006)
	Vehicle	531,956	552,481	491,700	(40,256)
Edmonds-Kingston	Pass	2,065,000	2,297,000	2,044,297	(20,703)
	Vehicle	2,067,000	2,461,000	2,190,255	123,255
Seattle-Bremerton	Pass	1,630,000	1,623,000	1,444,447	(185,553)
	Vehicle	732,000	783,000	696,859	(35,141)
Total Passenger-vehicle		14,156,910	15,293,508	13,611,003	(545,907)
Seattle-Bremerton POF		280,000	928,000		648,000
				Implied transfers	545,907
				Estimated induced riders	102,093
				Induced as percent of transfers	**18.7%**

Source: Washington State Ferries, Berk & Associates, 2004

Impact of Higher Fares on POF Demand. Given the importance of achieving a reasonable cost recovery rate, ridership implications of a higher fare were evaluated. Keeping other operating assumptions constant, ridership was estimated assuming a POF fare of $5.00 each way, or 2.0 times the Central Sound fare, for an average fare increase of 31%. The analysis suggests that demand will drop an average of 15% in response, with peak demand levels shown in Table 12. This higher fare level is consistent with fare expectations for private POF operations in the region.

Table 12
Westbound P.M. Peak Demand
(Riders Switching from WSF Routes Plus Induced Ridership: $5.00 One-Way Fare)

	2003	2010	2015	2020
Seattle-Clinton	N/A	81	135	189
Seattle-Kingston	N/A	765	887	1,009
Seattle-Vashon	413*	268	294	320
Seattle-Southworth	N/A	1,588	1,753	1,919
Seattle-Vashon-Southworth	N/A	1,019	1,303	1,586

Source: Washington State Ferries, Berk & Associates, 2004

5.0 THE ECONOMICS OF POF SERVICE

5.1 Introduction and Purpose of the Analysis

This section responds to the proviso's request for an evaluation of "how operating economies and reasonable fare box recoveries can be established by scheduling A.M. and P.M. services to match commuter demand and to fit within existing collective bargaining agreements as interpreted and applied to facilitate 'split shift' transit-like operations."

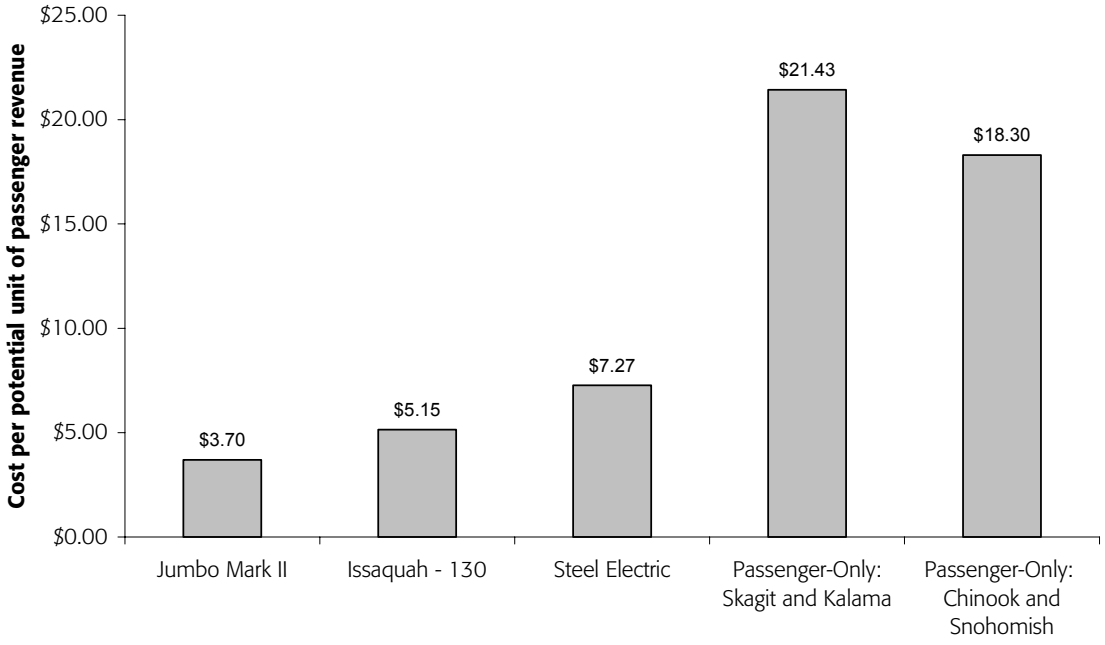
Overview. The economics of POF service encompass a set of interrelated variables including demand, fare structure, level of service (including frequency of service and vessel capacity), cost of service delivery, and cost recovery/subsidy expectations. As with any transportation system, POF service is most efficient when vessels are used to their full capacity, with few vacant seats on any given trip. The commute-driven nature of POF demand makes it difficult to achieve high utilization rates overall by filling seats on non-peak trips and in the non-peak direction. To attain greater efficiency, two approaches are possible: promote the service to fill empty seats, or match service delivery to demand.

5.2 Passenger Service Delivery Analysis

Passenger-Only and Passenger-Vehicle Ferry Operating Cost Comparison. The transportation of passengers across Puget Sound may be accomplished by employing either passenger-only or passenger-vehicle ferries. The two vessel types have very different operating profiles, as reflected in Figure 1. The Figure shows vessel operating cost for an 8-hour block of service for WSF's vessel classes, divided by the total number of fare units. A fare unit is an adjusted capacity number reflecting the fact that a car space generates more revenue than a passenger seat. Each car space generates approximately 3.8 times more revenue than a passenger seat. As the Figure reflects, vessel operating costs on a per-passenger revenue unit basis range from $3.70 to $7.27 for WSF's passenger-vehicle boats, compared with $18.30-$21.43 for the agency's two POF vessel types. Thus, while the passenger-vehicle vessels are more costly to run per hour, their much greater carrying capacity translates into a more efficient means of transporting passengers on higher density routes than passenger-only ferries. In essence, the passenger-vehicle ferry is the high capacity transit option for the region's water-based transportation system.

Currently, all of WSF's passenger-vehicle ferry routes have unused passenger capacity on most, if not every sailing. To the extent that growth in passenger demand can be accommodated within WSF's existing route structure, the incremental operating cost of serving additional walk-on passengers is minimal. On most routes, even large increases in passengers would result in relatively small incremental terminal costs and likely no additional vessel costs. Since most of the demand for service on potential new POF routes will be diverted from existing WSF routes, the only situation where serving growth using passenger-only vessels might be cost effective is when there is no additional capacity within the passenger-vehicle system.

Figure 1
Comparative Costs of Operating Passenger-Vehicle and Passenger-Only Ferries Per Potential Unit of Passenger Revenue (8-Hour Shifts)



Source: Washington State Ferries, Berk & Associates, 2004

Operating Cost Assessment: Optimally Sizing a POF Fleet. The size of boats in a fleet is a fundamental decision tied to a series of tradeoffs. A small number of higher-capacity vessels require less capital investment, both in vessels and terminals. Crew costs for a small number of larger vessels are also lower than the costs of crewing a larger number of small vessels.

The lower costs of a fleet of larger vessels, however, come with a tradeoff. A fleet of smaller vessels is more flexible than a fleet comprised of a few bigger boats. Particularly if coupled with flexible labor provisions, a fleet of small boats may be efficiently deployed to match demand, perhaps deploying all vessels during periods of peak demand and a reduced number of vessels during the mid-day lull, resulting in a higher utilization rate per vessel. A fleet of small boats may also provide more frequent service than a few bigger boats, with shorter headways between sailings.

Cost differences between these two operating models—a smaller number of larger vessels versus a larger number of relatively smaller vessels—are reflected in Table 13, which presents the relative costs of operating 149-, 250-, and 350-passenger boats on a hypothetical 7.5 mile route, assuming WSF operations. This analysis sizes the fleet based on a 4-hour peak demand of 700 riders, assuming that split shifts for the crew allow peak-hour service provided eight hours a day, five days a week, fifty-two weeks a year. Vessel acquisition costs are estimates based on available market data. Terminal capital costs are estimates reflecting the approximate difference in infrastructure requirements to accommodate 149-, 250-, and 350-passenger vessels. Terminal operations and overhead costs are assumed to be the same for all vessel classes.

The analysis shows that:

- With 8-hour service (a single split shift of 4 hours during each daily peak period), it is more economical to run two 350-passenger boats than three 250- or five 149-passenger vessels.
- With 16-hour service, including multiple vessels providing service during peak hours and one vessel providing off-peak service, the costs of operating the three vessel sizes are about equivalent. The cost-saving flexibility of a larger fleet of small vessels is offset by the cost of running multiple vessels.

Table 13
Comparison of Capital and Operating Costs for 149-, 250- and 350-Passenger Vessels on a Hypothetical 7.5 Mile Route: WSF Operations

	149-Pax	250-Pax	350-Pax
Number of vessels required to serve peak hour demand of 700 riders	5	3	2
Total seats	745	750	700
Headway for 7.5 nautical mile route	11 mins	18 mins	27 mins
Capital Costs			
Vessel acquisition, amortized over 20 years, assuming new vessels	$1,250,000	$1,350,000	$1,100,000
Vessel acquisition, amortized over 20 years, assuming old vessels	$500,000	$540,000	$440,000
Terminal development, amortized over 30 years	$933,333	$800,000	$666,667
Total Capital Costs Assuming New Vessels	**$2,183,333**	**$2,150,000**	**$1,766,667**
Operating Costs			
Crew cost	$887,567	$1,060,262	$706,841
Fuel	$936,000	$936,000	$1,248,000
Routine maintenance including labor	$971,856	$617,652	$411,768
Major maintenance	$824,626	$494,775	$329,850
Terminals	$411,840	$411,840	$411,840
Overhead, administration, and profit	$823,804	$823,804	$823,804
Total for 8 Hours of Operation per Day	**$4,855,693**	**$4,344,334**	**$3,932,104**
Total for 16 Hours of Operation per Day	**$5,826,831**	**$5,790,997**	**$5,898,155**
Total Annualized Capital and Operations			
8 Hours of Operation per Day	**$7,039,026**	**$6,494,334**	**$5,698,770**
16 Hours of Operation per Day	**$8,010,164**	**$7,940,997**	**$7,664,822**
Total Annualized Cost per seat			
8 Hours of Operation per Day	**$9,448**	**$8,659**	**$8,141**
16 Hours of Operation per Day	**$10,752**	**$10,588**	**$10,950**

Assumptions

WSF cost structure
Route is 7.5 nautical miles one-way
Number of vessels required is determined by 700 passenger demand
2,080 hours of operations per year (8 hours x 52 weeks x 5 days)
16 hours of service, only 1 vessel operated during off-peak hours (1 vessel operates for 16 hours the other(s) for only 8 hours)

Vessel acquisition prices	**149-Pax**	**250-Pax**	**350-Pax**
New	$5,000,000	$9,000,000	$11,000,000
Used	$2,000,000	$3,600,000	$4,400,000
Terminal capital costs by vessel size	$14,000,000	$12,000,000	$10,000,000

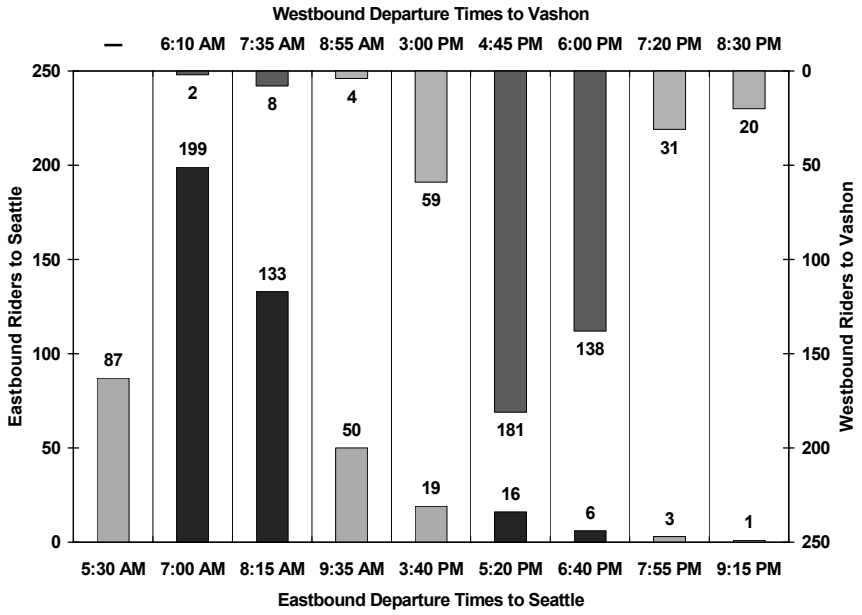
Source: Washington State Ferries, Berk & Associates, 2004

5.3 The Challenge of Meeting Peak Service Demand

The majority of riders on POF routes are commuters, most of whom wish to arrive in Seattle in the morning and return home in the evening. Conceptually, service demand looks like a barbell, with concentrations of ridership on two ends of the day. The peak nature of POF demand is a defining feature of the service, and a critical issue to address in designing a cost-effective and sustainable operating plan.

In addition to the "barbell shaped" demand pattern for POF service—high morning demand in the eastbound, Seattle direction and high evening demand westbound—there is also peaking observable within the peak periods. This can be characterized as "the peak of the peak" demand. This phenomenon is clearly visible in Figure 2, which graphically depicts ridership on the Seattle-Vashon POF route.

Figure 2
Seattle-Vashon POF Ridership Pattern:
A Peak within the Peak Period



Source: Washington State Ferries, Parsons Brinckerhoff, 2003

As the Figure shows, the 4-hour eastbound morning peak constitutes 91% of the day's eastbound traffic, and the 4-hour westbound evening peak constitutes 97% of the day's westbound traffic. For both eastbound and westbound instances, more than 40% of the 4-hour peak demand is for one particular trip, and more than 70% of the 4-hour demand is carried by the two peak trips. Thus, the 7:00 and 8:15 morning trips carry the bulk of commuters to work and the 4:45 and 6:00 evening trips carry them home.

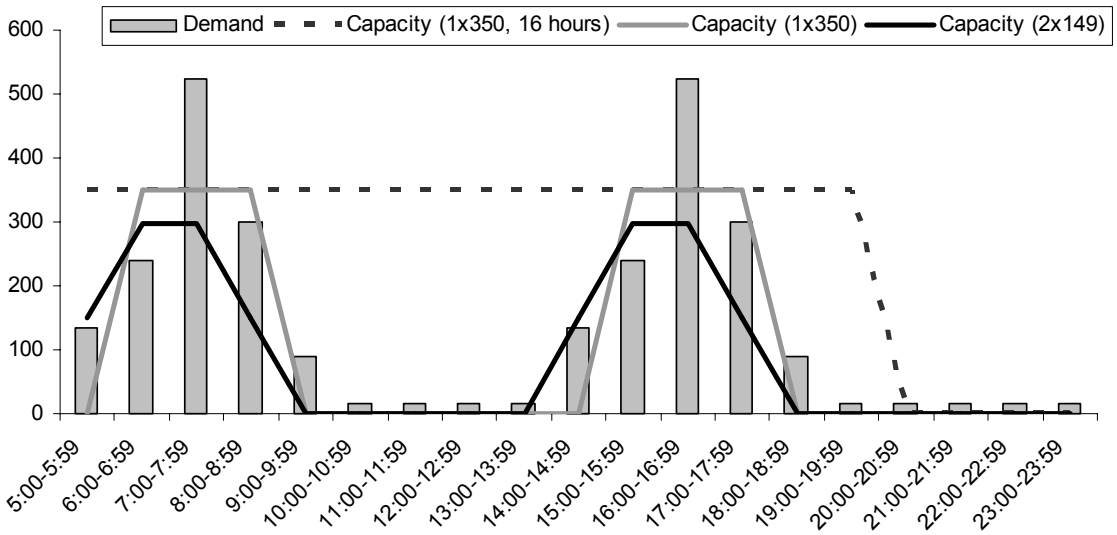
As discussed in the demand analysis section, this peak within the peak phenomenon will also be a factor on the Seattle-Bainbridge route by 2015. While there will be adequate walk-on passenger capacity within the overall 4-hour P.M. peak period, at least one sailing is likely to be overloaded, causing riders within that window of time to face the choice of waiting for the next sailing or taking a different route.

Hours of Service Provision Analysis. The ability to match service provision to morning and afternoon peaks will be greatly affected by WSF's ability to work with its labor unions to implement split shifts. WSF has traditionally been tied to continuous 8-hour shifts. Given morning and evening demand, it is necessary to employ two of these 8-hour blocks, resulting in 16 hours of service. Because demand is low during the mid-day, the result is inefficient service with low vessel utilization and relatively low cost recovery.

Figure 3 illustrates three hypothetical alternatives to providing service on a commute route with morning and afternoon peaks in demand. The grey bars in the Figure represent demand and the Figure's lines represent different service alternatives. Where demand is greater than service provision, riders are left on the dock. Where demand is less than the level of service provided, the vessel is operating at less than 100% utilization. Key findings portrayed in this Figure are:

- The dotted line represents service with a 350-passenger vessel provided over two 8-hour shifts for a total of 16 hours. In spite of a great deal of unused capacity in the mid-day, not all demand is for the 7:00-7:59 hour is met.
- The solid grey line represents service provided with a 350-passenger vessel operating on an 8-hour split shift. Capacity is more closely matched to demand.
- The black line represents a more optimal alternative to match service with demand: two 150-passenger vessels operating in staggered 8-hour split shifts.

Figure 3
Matching Service Delivery to Passenger Demand



Source: Berk & Associates, 2004

The tradeoffs among these options are summarized by examining the percent of total daily demand that is carried and the average utilization of the vessel, as shown in Table 14. While the 16-hour shift carries the greatest percentage of demand, average utilization is low as the boat sails nearly empty during the mid-day lull. This is an inefficient form of service delivery for this demand pattern. The third option, with split shifts and a fleet of small vessels allows the greatest flexibility and offers the highest utilization rate.

Table 14
Summary of Alternative Efficiency

	16 hours	8-hour split shifts	
	1x350	1x350	2x149
Total Demand Carried	86%	68%	61%
Average Utilization	45%	88%	93%

Source: Berk & Associates, 2004

5.4 Cost Structure Assessment: WSF Versus a Public-Private Provider

Table 15 presents comparative per-hour costs of a hypothetical 7.5 mile route for WSF and a public-private provider. The Table assesses operation and maintenance costs per vessel, assuming three vessel scenarios: 149-, 250- and 350-passenger boats. Crew assignments are per Coast Guard requirements for passenger-only fast ferries, and both WSF and the hypothetical public-private provider are assumed to operate the same vessels with the same fuel consumption and maintenance requirements. Labor and major maintenance costs were provided by WSF and Kitsap Transit. A caveat to the analysis is that these modeled cost comparisons should be treated with care, given the differences in scale between entities and the fact that the privately-operated POF service is very new. Actual costs of the privately provided service may vary from the business plan.

The bottom line of the analysis in Table 15 is that a public-private operator may provide service at 14-25% lower cost than WSF. The principal advantage for the public-private operator is related to crew and maintenance labor. Moreover, because the critical factor in a provider's ability to cost-effectively match service provision with demand is the use of split shifts, if a public-private operator can deploy crews on split shifts and WSF cannot, this would be the greatest point of differentiation in the two cost structures.

Table 15
Operating and Maintenance Costs Per Hour of POF Service Per Vessel

WSF Service Provider	**149-Pax**	**250-Pax**	**350-Pax**
Crew size	3	5	5
Crew cost	$85	$170	$170
Fuel	$90	$150	$300
Other	$336	$376	$411
Total/hour	**$511**	**$696**	**$881**
Total/hour/seat	**$3.43**	**$2.78**	**$2.52**

Public-Private Service Provider	**149-Pax**	**250-Pax**	**350-Pax**
Crew size	3	5	5
Crew cost	$60	$120	$120
Fuel	$114	$190	$380
Other	$208	$228	$257
Total/hour	**$382**	**$538**	**$757**
Total/hour/seat	**$2.56**	**$2.15**	**$2.16**

Savings for Public-Private	**$129**	**$158**	**$124**
Percent reduction from WSF	**25%**	**23%**	**14%**

Source: Washington State Ferries, Kitsap Transit, Berk & Associates, 2004

5.5 Labor Requirements for WSF Operation of Expanded POF Service

Overview. WSF has three fleet unions:

- Inland Boatman's Union (IBU), the largest union, which covers the unlicensed deckhands, a total of about 1,000 of the 1,600 fleet employees.
- Masters, Mates and Pilots union, which covers licensed deckhands.
- Marine Engineers Beneficial Association, the marine engineers union.

Ferry crew members are prohibited from striking. This prohibition was put in place to provide continuity and stability of service. As a tradeoff for this situation, labor disputes which cannot otherwise be resolved are adjudicated by the Marine Employees Commission (MEC).

Conditions Under Which WSF Could Feasibly Operate New POF Routes: Split Shifts or Part-Time Shifts. Given the necessity of effectively matching service to peak period demand and the importance of labor costs in the operating equation for POF service, WSF will need to bargain for changes in work rules if it is to expand its POF operations. These work rule changes could be to allow split shifts or part-time shifts. WSF now has very few part-time employees – about 10 on the vessel side and 35 on the terminal side – and no split shifts. Split shifts are widely used by transit agencies across the country, to effectively match hours of crew service with peak travel demand periods.

In Western Washington, split shifts are the rule among transit providers. Community Transit, Kitsap Transit, King County Metro Transit, and Pierce Transit all run split shifts regularly and have for many years. Split shifts have recently become less common at Pierce Transit, and the more rural Island Transit and Jefferson Transit systems also run split shifts, but infrequently.

Split shifts are less common for ferry operations; the *Comparative Survey of Passenger Ferry and Transit Systems* conducted for this project (Attachment D) indicates that of the six passenger ferry systems surveyed, only NY Waterway, a private company, employs this practice. Financial constraints at the Water Transit Authority, a new publicly owned system starting up in San Francisco, may eventually make split shifts a necessity for that agency.

Work Practices: Flexible Crewing and Call-Out Provisions. To provide expanded POF service that is financially feasible, WSF and its fleet unions will need to agree on a flexible approach to crewing the service. WSF's interest should be to realize the most cost-effective approach to manning the vessels that is still within the requirements set forth by Coast Guard regulations. Crew requirements will vary by vessel type. Manning for the Chinook and Snohomish, for example, has been set at the Coast Guard-required level.

Another work practice that will need to change is on-call agreements. These agreements govern how relief crew members are compensated when they are "called out" for service. Currently, relief crew members are guaranteed a minimum of eight hours pay for call outs. A common principle that WSF will need to adopt is that of "work for/paid for" practices – workers will only be paid for the hours worked, rather than a minimum number of call out hours which may or may not correspond to the hours worked in that period.

6.0 ROUTE-BY-ROUTE POF OPERATIONAL ASSESSMENT

6.1 Introduction and Overview of Approach

This route-by-route analysis summarizes service and financial modeling conducted for the four corridors in the proviso: Seattle-Clinton, Seattle-Kingston, Seattle-Southworth, and Seattle-Vashon, plus a Seattle-Vashon-Southworth POF Triangle route option. The routes were assessed under a mix of operating parameters and assumptions:

- **Vessel sizes.** Options for meeting expected demand through smaller or larger vessels were evaluated, allowing for an assessment of tradeoffs between larger vessels' lower cost per seat and the flexibility of a fleet of smaller vessels. Vessel sizes chosen in the summary tables below are the most cost-effective for each route.
- **Service days.** Both an 8-hour service day (peak service only with split shifts) and a 16-hour day (service operated throughout the day) were analyzed. The summary tables presented reflect peak-only service, operated on two 4-hour split shifts.
- **Fare level.** A base average fare of $3.80 each way (1.5 times the Central Sound Fare) and a higher average fare of $5.00 each way (2.0 times the Central Sound Fare) were modeled. Both fares are higher than the $3.25 average one-way fare for current Seattle-Vashon POF service.
- **Operator.** Scenarios were evaluated assuming operation by both WSF and a public-private operation similar to current arrangements between Kitsap Transit and private operators serving Bremerton and Kingston.

Attachment E contains detailed operating and financial pro formas for each route analyzed.

6.2 Seattle-Clinton POF Route Operational Assessment

At 26.7 nautical miles, the Seattle-Clinton route is almost twice as long as the other POF routes studied. The length of the route coupled with the relatively low estimated demand means that this route will be difficult to operate cost-effectively, either by WSF or a public-private provider.

Table 16 presents the operating pro forma for this route option. As the Table shows, total ridership in the 4-hour P.M. peak would only be 164 riders by 2015. If WSF were to operate peak-only service with a fleet of three 149-passenger vessels and a $3.80 one-way fare, the route would incur an annual shortfall of $1.8 million. Cost recovery rates would be 15% based on all revenues, and 8% based on new revenues only (not counting revenues from existing WSF riders switching to the new route).

Need for Passenger Capacity in the Corridor. The Clinton corridor currently has ample capacity to serve passenger demand. The capacity analysis in Section 4 shows that in 2015 the Mukilteo-Clinton route will still have significant passenger capacity available: it will operate at 47% capacity with about 5,000 passenger spaces available in the 4-hour P.M. peak period.

Multimodal Options. Multimodal transportation choices for Clinton riders are also available through the Sounder commuter rail service, with direct connections from the Mukilteo Multimodal terminal to downtown Seattle.

Table 16
Seattle-Clinton POF
Summary of Operating Pro Formas with Split Shifts
Based on 4-Hour Peak Demand (2015)

	149-Pax
Ridership: Westbound Weekday PM 4-Hour Peak (3-7 PM)	
Estimated transfers	131
Estimated induced ridership	33
Total estimated ridership	164
Percent of PM 4-hour peak demand carried	100%
Fleet	
Total fleet size (including maintenance spares)	3
Average vessel utilization rate	15%
Annual Operating Financials, Assuming WSF Operations and $3.80 One-Way Fares	
Operating surplus/(shortfall)	($1,805,562)
Cost recovery - all revenues	15%
Cost recovery - new revenues only*	8%
Impact of Public-Private Service Provider and $5.00 One-Way Fares	
Revenue impact to WSF under public-private operations	($130,236)

Assumptions
- Chosen vessel size is the most cost effective for this route
- Peak-only service, operating on two 4-hour split shifts

*New revenue includes all revenues from induced ridership and incremental increases from transfers

Source: Washington State Ferries, Berk & Associates, 2004

6.3 Seattle-Kingston POF Route Operational Assessment

Table 17 presents the operating pro forma for the Seattle-Kingston route. As the Table reflects, by 2015 total ridership in the 4-hour P.M. peak will be an estimated 1,160 passengers and 84% of this demand could be accommodated with a three-vessel fleet of 250-passenger boats (including one boat as a maintenance spare). If WSF were to operate an 8-hour split shift service with a $3.80 one-way fare, the route would have a $769,000 shortfall. Cost recovery rates would be 73% for all revenues and 37% with new revenues only, not including revenue from riders switching from other WSF routes.

If a public-private operator provided service on the route and charged a $5.00 one-way fare, the revenue loss from those switching or diverted riders would be $830,000, or about the same amount as the operating shortfall incurred if WSF were to provide the service. Thus, public-private operation of the route is revenue-neutral to WSF, in contrast to the operating impacts to WSF on the South Sound routes, as discussed below.

Need for Passenger Capacity in the Corridor. The ridership analysis presented in Section 4.0 shows that in 2010 WSF riders choosing the Seattle-Kingston POF route will be drawn 68% from the Seattle-Bainbridge route, and 32% from Edmonds-Kingston. By 2015, this trend will have accelerated: 70% of the riders switching from WSF routes would be drawn from Seattle-Bainbridge and 30% from Edmonds-Kingston. There will also be new induced ridership drawn to the route; this is estimated to be an additional 20% of total ridership.

The capacity analysis for these two routes shows considerable passenger capacity available in the P.M. peak in 2015:

- Seattle-Bainbridge will be at 73% of passenger capacity (3,340 passenger spaces available).
- Edmonds-Kingston will be at 27% of capacity, with 9,839 passenger spaces available.

However, at the peak of the peak the analysis shows that there will be at least one sailing on the Seattle-Bainbridge route which exceeds available passenger capacity by 2015.

The Transportation Commission's adopted level of service goal reflected in WSF's *System Plan for 1999-2018* calls for accommodating all pedestrians on each sailing — a zero boat wait. If capacity is reached by 2015, riders will have multiple options:

- Waiting for the next boat, since there is capacity available within the 4-hour peak period.
- Taking an alternative WSF route: Edmonds-Kingston with a Sounder connection, or a Seattle-Bremerton sailing.

Assuming a successful public-private Seattle-Kingston POF service, this service is also likely to mitigate overloaded sailings on the Seattle-Bainbridge route within the ten-year planning horizon.

State Resources for Public-Private Operations. In January 2005 a private operator began providing Seattle-Kingston POF service through a Joint Development Agreement with Kitsap Transit. Kitsap Transit and the private operator have worked hard to plan for this service, and this effort – which was encouraged by the Legislature through ESHB 1853 – should be respected. However, given the ridership diversion from WSF's existing passenger-vehicle ferry routes, the substantial passenger capacity available on those routes, and the regional investments in multimodal transportation linkages connecting the Edmonds-Kingston corridor to downtown Seattle, it would not be in the State's interest to financially support the public-private Kingston POF service.

Table 17
Seattle-Kingston POF
Summary of Operating Pro Formas with Split Shifts
Based on 4-Hour Peak Demand (2015)

	250-Pax
Ridership: Westbound Weekday PM 4-Hour Peak (3-7 PM)	
Estimated transfers	928
Estimated induced ridership	232
Total estimated ridership	1,160
Percent of PM 4-hour peak demand carried	84%
Fleet	
Total fleet size (including maintenance spares)	3
Average vessel utilization rate	35%
Annual Operating Financials, Assuming WSF Operations and $3.80 One-Way Fares	
Operating surplus/(shortfall)	($768,815)
Cost recovery - all revenues	73%
Cost recovery - new revenues only*	37%
Impact of Public-Private Service Provider and $5.00 One-Way Fares	
Revenue impact to WSF under public-private operations	($829,871)
Assumptions	
- Chosen vessel size is the most cost effective for this route	
- Peak-only service, operating on two 4-hour split shifts	

*New revenue includes all revenues from induced ridership and incremental increases from transfers

Source: Washington State Ferries, Berk & Associates, 2004

6.4 Seattle-Vashon POF Route Operational Assessment

This service already exists and provides some relief to congested conditions at the Fauntleroy terminal, where it is difficult to stage bus service and there is no overhead loading to separate pedestrians from vehicles. In addition to providing service to the Vashon market, this route provides service to riders from Southworth; in 2003, 46% of demand for the route was from transfers from Southworth-Vashon.

Table 18 summarizes the operating pro forma for a Seattle-Vashon only route, assuming that the Southworth market is served by a direct Seattle-Southworth or Seattle-South Kitsap service. The pro forma shows that for the 4-hour P.M. peak period in 2015, assuming a 149-passenger boat, peak-only split shift service, and a $3.80 one-way fare, the operating shortfall to run the route will be approximately $648,000. The cost recovery rate will be 39% for all revenues and 5% for new revenues only. The revenue impact to WSF of a public-private operator (or another public operator such as King County) serving the route would be a revenue loss of $348,454 assuming a $5.00 one-way fare is charged. This revenue loss, however, would be offset by the cost savings to WSF from not serving the route, for a positive net impact of $2.56 million to the agency.

Table 18
Seattle-Vashon POF
Summary of Operating Pro Formas with Split Shifts
Based on 4-Hour Peak Demand (2015)

	149-Pax
Ridership: Westbound Weekday PM 4-Hour Peak (3-7 PM)	
Estimated transfers	240
Estimated induced ridership	60
Total estimated ridership	299
Percent of PM 4-hour peak demand carried	69%
Fleet	
Total fleet size (including maintenance spares)	2
Average vessel utilization rate	28%
Annual Operating Financials, Assuming WSF Operations and $3.80 One-Way Fares	
Operating surplus/(shortfall)	($648,228)
Cost recovery - all revenues	39%
Cost recovery - new revenues only*	5%
Impact of Public-Private Service Provider and $5.00 One-Way Fares	
Revenue impact to WSF under public-private operations	($348,454)
Cost savings to WSF with no service provision	$2,896,649
Net Impact to WSF	$2,548,195
Assumptions	
- Chosen vessel size is the most cost effective for this route	
- Peak-only service, operating on two 4-hour split shifts	

*New revenue includes all revenues from induced ridership and incremental increases from transfers

Source: Washington State Ferries, Berk & Associates, 2004

6.5 Seattle-Southworth POF Route Operational Assessment

This market is currently served by WSF, with many Southworth residents traveling to Vashon and then transferring to the Seattle-Vashon POF.

Capacity Analysis. The capacity analysis in Section 4.0 shows that there is available passenger capacity on the Fauntleroy-Southworth route, which in 2003 was operating at 50% of passenger capacity (955 passenger spaces available in the 4-hour P.M. peak). By 2015, passenger utilization will increase to 56%.

Analysis of POF Options. A key strategic question facing WSF is how to best meet demand in the South Sound market. Table 19 presents a summary pro forma analysis of Seattle-Southworth POF service. As the Table shows, meeting this demand in 2015 will require a fleet of five 250-passenger vessels (including maintenance spares). Assuming split shift operations and a $3.80 one-way fare, cost recovery will be 66% considering all revenues and 33% considering new revenues only. This service will incur a $1.98 million operating shortfall in 2015. As the summary pro forma shows, the revenue impact to WSF of public-private operations on this route would be a negative $1.45 million.

A longer-term solution to this challenge would be for WSF to provide direct passenger-vehicle service from Southworth to Seattle. This direct connection would also relieve vehicle pressure on the constrained Fauntleroy terminal. This route option is being studied by WSF as part of the agency's Long Range Strategic Plan. If this option becomes the preferred long-term strategy for the corridor, providing Seattle-Southworth POF service in the near-term would help build this market, easing the eventual transition to direct Seattle-Southworth passenger-vehicle service while diverting some vehicle traffic from Fauntleroy.

Table 19
Seattle-Southworth POF
Summary of Operating Pro Formas with Split Shifts
Based on 4-Hour Peak Demand (2015)

	250-Pax
Ridership: Westbound Weekday PM 4-Hour Peak (3-7 PM)	
Estimated transfers	1,562
Estimated induced ridership	391
Total estimated ridership	1,953
Percent of PM 4-hour peak demand carried	95%
Fleet	
Total fleet size (including maintenance spares)	5
Average vessel utilization rate	28%
Annual Operating Financials, Assuming WSF Operations and $3.80 One-Way Fares	
Operating surplus/(shortfall)	($1,980,203)
Cost recovery - all revenues	66%
Cost recovery - new revenues only*	33%
Impact of Public-Private Service Provider and $5.00 One-Way Fares	
Revenue impact to WSF under public-private operations	($1,450,557)
Assumptions	
- Chosen vessel size is the most cost effective for this route	
- Peak-only service, operating on two 4-hour split shifts	

*New revenue includes all revenues from induced ridership and incremental increases from transfers

Source: Washington State Ferries, Berk & Associates, 2004

6.6 Seattle-Vashon-Southworth POF Triangle Service

An opportunity exists for WSF to provide improved service to the two South Sound routes, Vashon and Southworth. The markets in question are already served by WSF, albeit in a suboptimal and inconvenient manner, with passengers transferring from Southworth to the Seattle-Vashon POF. Rather than splitting these markets and operating two direct routes, a South Sound POF Triangle Route could be implemented, connecting Vashon, Southworth and Seattle. This strategy takes advantage of the physical proximity of the two ports (an eight minute crossing time) and provides a relatively low-cost and efficient means of maintaining service to these two existing WSF markets.

This route option would provide a number of benefits, including:

- Addressing the need to recapitalize the fleet operating on the Seattle-Vashon POF route (the Skagit and Kalama). These vessels are nearing the end of their useful lives and must be replaced if service is to continue.
- Providing improved service to the Southworth market by not requiring passengers to transfer at Vashon.
- Combining the relatively high ridership demand potential from Southworth with lower ridership demand originating in Vashon, allowing for more efficient continuation of service at Vashon.
- Building the market for a potential direct Seattle-Southworth passenger-vehicle ferry service in the future. This would allow for eventual de-linking of the current inefficient Fauntleroy-Vashon-Southworth passenger-vehicle ferry service and would relieve pressure on the Fauntleroy terminal.

Conceptual Pro Forma Assessment. Table 20 presents a conceptual pro forma to assess this option. As the Table shows, by 2015 serving this route will require three 350-passenger vessels (including a maintenance spare). The operating shortfall will be approximately $969,000, assuming split shift peak-only service and a $3.80 one-way fare. If a public-private operator provides the service, the negative revenue impact to WSF is estimated to be $1.16 million.

This route option is analyzed in greater detail in the next section – Options to Serve the South Sound POF Market.

Table 20
South Sound POF Triangle
Summary of Operating Pro Formas with Split Shifts
Based on 4-Hour Peak Demand (2015)

	350-Pax
Ridership: Westbound Weekday PM 4-Hour Peak (3-7 PM)	
Estimated transfers	1,242
Estimated induced ridership	311
Total estimated ridership	1,553
Percent of PM 4-hour peak demand carried	86%
Fleet	
Total fleet size (including maintenance spares)	3
Average vessel utilization rate	32%
Annual Operating Financials, Assuming WSF Operations and $3.80 One-Way Fares	
Operating surplus/(shortfall)	($969,037)
Cost recovery - all revenues	74%
Cost recovery - new revenues only*	37%
Impact of Public-Private Service Provider and $5.00 One-Way Fares	
Revenue impact to WSF under public-private operations	($1,163,700)
Assumptions	
- Chosen vessel size is the most cost effective for this route	
- Peak-only service, operating on two 4-hour split shifts	

*New revenue includes all revenues from induced ridership and incremental increases from transfers

Source: Washington State Ferries, Berk & Associates, 2004

7.0 OPTIONS TO SERVE THE SOUTH SOUND POF MARKET

7.1 Comparative POF Scenarios Assuming WSF Operations

Need for Passenger Capacity in the Corridor. As the route assessments show, the major strategic POF issue for WSF relates to how to best serve the two South Sound markets. The passenger capacity analysis in Section 4.0 shows that by 2010, assuming that the Southworth market continues to be served by a Seattle-Vashon only POF service, this route will be at 109% of capacity for the 4-hour P.M. peak period, and this over-capacity situation will worsen by 2015, when the route will be at 118% of capacity. Within the 1-hour peak at 5:00 P.M., the route will be at 121% of capacity in 2010 and 132% of capacity by 2015. This situation suggests that—absent any change in service provision or available capacity—the route will be overcapacity at peak periods and riders will either need to wait for another sailing, or take a passenger-vehicle ferry from Fauntleroy to Vashon or Southworth.

From both strategic and operational perspectives, the South Sound corridor presents a challenging combination of substantial projected growth in demand, limited vessel capacity and significant terminal constraints at Fauntleroy, which together, create a near-term need for action. Three scenarios are possible for WSF to serve these markets:

1. Maintain the current Seattle-Vashon POF service, replacing the Skagit and Kalama with newer and larger vessels to serve Southworth-related growth on the route.
2. Add direct Seattle-Southworth POF service and continue Seattle-Vashon POF service with a smaller vessel, to meet Vashon-only demand.
3. Implement a South Sound POF Triangle service, deploying the Chinook and Snohomish boats.

Figure 4 presents a graphic illustration of the vessel requirements for each of the WSF service scenarios, based on meeting growing demand in the corridor. For example, if the current Seattle-Vashon POF route is continued without direct service to Southworth, the operation would need to shift from a single 250-passenger vessel to a single 350-passenger vessel by 2010. However, if direct Seattle-Southworth service is provided, then the demand on Seattle-Vashon could be satisfied with a single 149-passenger vessel through the end of the planning period. In this scenario direct WSF Seattle-Southworth service would start in 2008 with a 250-passenger vessel and add an additional 250-passenger vessel in both 2010 and 2015. The South Sound POF Triangle option would require one 350-passenger vessel in operation at the outset, and a second operating vessel by 2015.

Figure 4
Vessel Plan for WSF South Sound POF Scenarios

		2005	2010	2015
Maintain Current Vashon-Seattle Service to Meet Demand		250 →	350 →	350
Add WSF Southworth-Seattle POF Service and Modify Vashon-Seattle POF Service	**Seattle-Vashon**	149 →		149
	Seattle-Southworth	250 →	250 →	250
			250 →	250
				250
Implement South Sound Triangle POF Service		350 →		350
				350

Source: Washington State Ferries, Berk & Associates, 2004

The three scenarios are summarized in Table 21, which presents a comparison of service characteristics, capital investment requirements, ridership and operating revenues and costs for the 2005-07 and 2007-09 biennia. Due to the peak nature of the demand on these routes, the analysis is predicated on a change in WSF labor agreements to allow split shifts. This will provide the most cost-effective service on a route structure with an almost exclusively commuter orientation. The other important assumption reflected is the higher fare assumed (an increase of $1.00 for a round trip) in the scenarios where service is expanded.

Table 21
Comparison of WSF South Sound POF Scenarios
(Assuming Split Shifts and 2004 Dollars)

	Maintain Current Seattle-Vashon Service to Meet Demand	Add WSF Seattle-Southworth POF Service and Modify Seattle-Vashon POF Service	Implement South Sound POF Triangle Service
Service Characteristics			
Operations	One 8-hour split shift	One 8-hour split shift	One 8-hour split shift
Vessels in service	One 350-passenger vessel	Southworth: one 250-pax Vashon: one 149-pax	One 350-passenger vessel
WSF Capital Investment in 2005-7 Biennium			
Description	Replace Skagit, Kalama by deploying the Snohomish and Chinook; improve Vashon terminal	Replace Skagit, Kalama with one 149-pax vessel; purchase 250-pax vessel for Southworth-Seattle; purchase another 250-pax as backup for Vashon and Southworth routes; improve Southworth terminal	Deploy Snohomish, Chinook; improve Southworth and Vashon terminals
Capital to restart vessels	($1,200,000)	-	($1,200,000)
Capital to purchase new vessels	-	($23,000,000)	-
Net proceeds from sale of POFF	-	$6,920,000	-
Capital to improve terminals	($800,000)	($1,000,000)	($1,800,000)
Total capital required	($2,000,000)	($17,080,000)	($3,000,000)
WSF Finances for 2007-9 Biennium			
Ridership			
Total annual ridership	246,000	349,000	333,500
Number of 4-hour peak sailings	2	2	2
WSF Operating Finances for Biennium			
One-way fare (commuter rate)	$3.28	$3.80	$3.80
Fare revenue	$1,614,000	$2,653,000	$2,536,000
Operating costs	($3,525,000)	($4,829,000)	($3,525,000)
WSF operating surplus/(shortfall)	($1,911,000)	($2,176,000)	($989,000)
Farebox recovery rate	46%	55%	72%
Surplus/(subsidy) per passenger	($7.77)	($6.23)	($2.97)

Assumptions

- Figures are in 2004 dollars
- Net proceeds from sale of Chinook and Snohomish are based on an assumed $4M per vessel purchase price less sales costs assumed to be 10% and $1M in capital costs to prepare for sale.
- Estimates for current service configuration assume continuation of current fares. Fares for expanded/enhanced service are assumed to be $1.00 more per round trip.

Source: Washington State Ferries, Berk & Associates, 2004

Key findings for each of the scenarios are:

1. **Continue Seattle-Vashon Service.** Maintaining current Seattle-Vashon service to meet demand could be accomplished by deploying the Chinook and Snohomish to replace the Skagit and Kalama. Capital costs to restart the vessels and improve the Vashon terminal are $2.0 million.

   With estimated ridership of 246,000, the route will operate at a loss of approximately $1.9 million in the 2007-09 biennium.

2. **Continue Seattle-Vashon Service and Add Direct Seattle-Southworth Service.** Adding direct Seattle-Southworth POF service in addition to WSF's Seattle-Vashon service and running service in an effective manner will involve replacing the Skagit and Kalama with a 149-passenger vessel, and purchasing two 250-passenger boats, one to serve Seattle-Southworth and one as a back-up for both routes. Net capital costs, including terminal improvements, sale of the Chinook and Snohomish and purchase of smaller, more appropriately sized vessels are estimated at $17.1 million.

   With an estimated ridership of 349,000, the route will operate at a loss of $2.2 million for the biennium.

3. **Serve the Vashon and Southworth Markets through a POF Triangle Service.** A South Sound POF Triangle service will require $3 million in capital costs: $1.2 million to redeploy the Chinook and Snohomish and $1.8 million in terminal costs.

   With estimated ridership of 333,500, the route will operate at a biennial loss of about $900,000.

Conclusion. The POF Triangle service configuration appears to provide the most cost-effective WSF operating solution for the South Sound over the next ten years. It represents a substantial improvement over the existing Seattle-Vashon operation because it would provide an increase in service to Southworth without an increase in operating costs and with similar capital costs. Because of the Southworth connection, the Triangle service is estimated to attract approximately 90,000 more trips than the Seattle-Vashon scenario. This additional ridership results in higher farebox revenues, higher farebox recovery rates and lower subsidy requirements.

Providing separate service to Vashon and Southworth would result in only a modest increase in ridership (approximately 14,000 per year) over the Triangle configuration. This increase in ridership is offset by higher operating costs, which create higher subsidy requirements and a lower cost recovery rate. Capital requirements are an important factor too: by sizing the route to effectively use the Chinook and Snohomish, vessel requirements are significantly lower with the Triangle option than with a separate Seattle-Southworth route.

7.2 Funding and Implementation Plan For a South Sound POF Triangle Service

This section presents an analysis of funding and implementation requirements to implement a South Sound POF Triangle plan. Key features of this plan include:

- Serving Vashon and Southworth passengers using the Chinook and Snohomish, already in State inventory but not in productive use. Investing in restoring the vessels to make them fully operational.
- Investing in the capital costs of upgrading the Vashon and Southworth terminals to accommodate the new service.
- Initially operating two 4-hour split shifts to accommodate two peak period trips and keep operating costs at or below current Seattle-Vashon service costs.

Figure 5 shows the design of the route, and the close proximity of the Vashon and Southworth terminals.

Figure 5
South Sound POF Triangle Service Route Option

Source: Washington State Ferries, Berk & Associates, 2004

Start-up Costs and Future Capacity Enhancements. For WSF to implement POF service in the South Sound Triangle, immediate vessel and terminal start-up costs will be incurred: approximately $1.2 million in vessel costs and $1.8 million in terminal improvements will be required. These investments are sufficient to support initial operations with service provided by a single vessel operating in two 4-hour periods, to meet morning and evening peak demand. If additional capacity is added to serve increased demand in future years, further investments will also be required.

WSF Terminal Requirements to Support a South Sound POF Triangle Service. The level of terminal improvements required to support enhanced POF service is dependent upon the level of service to be offered. The least costly option to support expansion of South Sound POF service is to modify and utilize existing passenger-vehicle slips. Table 22 presents the improvements needed at each terminal, and the timeline for their completing assuming work begins following the 2005 legislative session. An earlier start date for the improvements could potentially result in service starting sooner. Terminal improvements at Southworth are to modify the existing wingwalls and a mooring dolphin ($1.0 million). For Fauntleroy, the existing POF tie is sufficient to accommodate 149- or 250-passenger vessels, but would need approximately $800,000 in improvements to accommodate the 350-passenger Chinook and Snohomish.

Table 22
Initial Terminal Improvements Required for POF Service

Terminal	Estimated Cost (millions)	Expected Completion Date	Description
Southworth	$1.0	March 2007	Modify existing wingwalls to vehicle slips and add a dolphin.
Vashon*	$0.8	March 2007	Upgrade the POF tie-up by adding a raised landing platform on the existing float and constructing a mooring dolphin and fender.

* Only required if 350-passenger vessels are used.
Source: Washington State Ferries, 2004

Expanded Service Facility Needs. Use of the existing vehicle slip at Southworth would be sufficient for limited service with one vessel. If more frequent service is to be provided in the future, dedicated POF slips would be required. Three conceptual options have been considered by WSF for Southworth, ranging in cost from approximately $5 million to $11 million.

Existing infrastructure at WSF's Eagle Harbor maintenance facility is sufficient to accommodate two POF vessels. As the facility cannot be expanded, a replacement facility would be required if more than two POF vessels are to be employed, either on one route or with the implementation of more than one route. Existing infrastructure at Colman Dock can support POF service to two routes, with higher levels of service triggering the need for a terminal upgrade. The costs of both an Eastside maintenance facility to replace the current Eagle Harbor site and improvements at Colman Dock are not known. Costs for long-term terminal improvements are summarized in Table 23.

Table 23
Terminal Improvements Required for Future Service Expansion

Terminal	Estimated Cost (millions)	Expected Completion Date	Description
Vashon	$0.8*	March 2007	Upgrade the POF tie-up by adding a raised landing platform on the existing float and constructing a mooring dolphin and fender.
Colman Dock	Unknown	Unknown	Unknown
Eastside Maint. Facility	Unknown	Unknown	Unknown
Southworth Options			
Option 1	$4.9	January 2008	Construct a new slip consisting of a pile-supported passenger walkway and wingwalls designed for a PO ferry. Towers would support the gangway and the end of the gangway would land directly on the bow-loading deck of the PO ferry.
Option 2	$9.2	April 2008	Construct a new slip consisting of a pile supported passenger walkway, a passenger transfer span, and a State-supplied concrete "A" float and fender system. The float is currently in storage at Commencement Bay.
Option 3	$10.7	April 2008	Construct a new PO slip consisting of a pile-supported passenger walkway, a passenger transfer span and a steel float.

* This enhancement to existing passenger slip would not be necessary if done in initial terminal improvements.

Source: Washington State Ferries, 2004

South Sound POF Triangle Service Plan. Table 24 presents a summary-level service plan for this route option. As the Table shows, projected increases in demand imply service expansion beyond an 8-hour split shift beginning in 2009, and the addition of a second vessel in 2015. The use of two vessels would trigger terminal improvements at Southworth and Colman Dock, as well as the development of an Eastside maintenance facility to replace Eagle Harbor.

Table 24
South Sound POF Triangle Service Plan: 2007-2015

	Vessels in Operation	Operating Pattern	Total Daily Crew Hours	Type of Shifts	4-Hour Peak Sailings
2007	1	4 + 4 hours	8	Split shift	2
2008	1	4 + 4 hours	8	Split shift	2
2009	1	5 + 5 hours	10	Two part-time shifts	3
2010	1	5 + 5 hours	10	Two part-time shifts	3
2011	1	5 + 5 hours	10	Two part-time shifts	3
2012	1	5 + 5 hours	10	Two part-time shifts	3
2013	1	8 + 8 hours	16	Two full-time shifts	4
2014	1	8 + 8 hours	16	Two full-time shifts	4
2015	2	4 + 4 hours	16	Two split shifts	4

Source: Washington State Ferries, Berk & Associates, 2004

Financial Implications of Proposed Service Plan. With flexibility in operating patterns, and split shifts instituted to manage labor costs, implementation of a service plan for the South Sound POF Triangle would not have an adverse impact on WSF finances relative to the current budget for Seattle-Vashon POF service. Rather, as Table 25 shows, the net financial impact to WSF would be positive. The analysis shows that for 2007 and 2008 – the initial two years of operations – costs of providing service on a POF Triangle route are projected to be lower than the amount budgeted for the existing 16-hour POF service on the Seattle-Vashon route. From 2009 onward, the cost of providing the Triangle service is projected to be greater, but so too are revenues, which are enhanced through induced ridership demand and higher fare collections.

Two farebox recovery rates are shown in Table 25. The "All Revenue" rate includes revenues from existing passengers switching from passenger-vehicle routes. This figure does not reflect the net impact to WSF, which is better captured in the recovery rate based on new revenue only. The New Revenue rate, by contrast, considers revenue from induced demand (new riders to the System) and from switches (passengers who in the past paid lower fares to ride a passenger-vehicle route). This is a more appropriate figure by which to judge the cost-effectiveness of the route, as it reflects the reality that the majority of its riders will be those switching from other routes.

Table 25
Financial Implications of South Sound POF Service Plan: 2007-2015

	Vessels	Operating Pattern	Change in Revenues	Less	Change in Vessel Costs	=	Total Impact on WSF Finances	POF Farebox Recovery All Revenue	POF Farebox Recovery New Revenue Only
2007	1	4 + 4 Hours	$447,051		($265,361)		$712,412	69%	22%
2008	1	4 + 4 hours	$448,392		($274,649)		$723,041	72%	21%
2009	1	5 + 5 hours	$728,513		$266,979		$461,534	81%	27%
2010	1	5 + 5 hours	$724,857		$274,847		$450,010	84%	26%
2011	1	5 + 5 hours	$771,847		$282,714		$489,133	86%	27%
2012	1	5 + 5 hours	$821,307		$290,582		$530,725	87%	28%
2013	1	8 + 8 hours	$1,199,878		$2,116,038		($916,160)	70%	25%
2014	1	8 + 8 hours	$1,255,137		$2,171,820		($916,684)	70%	25%
2015	2	4 + 4 hours	$1,677,124		$7,351,854		($5,674,730)	43%	16%

Source: Berk & Associates, 2004

As reflected in Table 25, farebox recovery rates rise and fall as demand increases and the level of service provided intermittently increases. Recovery rates (reflective of all revenue) are projected to range from 69-87%, which is comparable to some WSF passenger-vehicle routes, and is significantly higher than current POF cost recovery rates.

7.3 Public-Private Option for Seattle-South Kitsap Service

The analysis of WSF South Sound POF options was premised on the assumption that WSF would be serving the growth in the South Kitsap market. However, Kitsap Transit is in discussion with at least two competing operators regarding new Seattle-South Kitsap service. The agency will work with both operators to submit applications for certification for the UTC, with plans to enter into a Joint Development Agreement with the successful applicant. Kitsap Transit is working to begin service within 24 months; a dock must be constructed on the West Side before service can begin. The agency's plan is to run 149-passenger vessels on the route.

In December 2004, the first of these applications was submitted to the UTC. The following is a brief description of the service plan proposed in the application:

- Start date 18 months after the granting of Certificate of Public Convenience and Necessity to operate vessels to provide passenger ferry service.
- Operate a single 149-passenger vessel between the Port of Bremerton's Harper Dock and either Pier 66 or Pier 48 on Seattle's waterfront, facilities both owned and operated by the Port of Seattle.
- Provide three round trips during each of the morning and afternoon peak commute periods.
- One-way fares would be $7.00 and round-trip fares would be $12.00. A 20-trip ticket book would be available for $120 and a monthly pass for $215.
- Expected annual ridership in Year 1 is 75,600, growing to 113,400 in Year 2.

Kitsap Transit has plans to increase service in this corridor to meet future demand. Those plans could include an operation of as many as five 149-passenger vessels operating at 15 minute headways during the peak commute periods. This level of service would require considerable capital investment in fleet and facilities. Toward this end, Kitsap Transit is seeking federal funds for design and construction of as many as four 149-passenger vessels.

Ridership Impacts on WSF. The demand analysis shows that the majority—an estimated 83%—of ridership on this route will come from existing and future WSF riders. This ridership diversion is significant given the available passenger capacity on WSF's passenger-vehicle routes. As discussed in the demand and capacity analysis (Section 4.0), in 2015 passenger capacity available on the routes during the westbound 3-7 P.M. peak period is estimated to be 56% on Fauntleroy-Southworth, 57% on Seattle-Bremerton and 73% on Seattle-Bainbridge.

Financial Impacts on WSF. The potential financial impacts on WSF of a Seattle-South Kitsap POF service are summarized in Table 26. The Table reflects various fleet sizes and levels of service that could be offered by a public-private operator, ranging from one to five boats. The more service the operator puts on the water, the greater the negative financial impact to WSF, as riders are increasingly drawn to the route from WSF's routes – particularly the Seattle-Vashon POF route. WSF's farebox recovery rates likewise decline as the private operator adds service. As the Table shows, with one-boat service, the total annual financial impact to WSF is ($456,351), and cost recovery declines for Seattle-Vashon POF service from 48% to 32%. In contrast, with five-boat service, the annual financial impact to WSF is ($1.6 million) and cost recovery drops to 17%. These percentages assume two 4-hour shifts for WSF. In comparison, in FY 2004, operating with two 8-hour shifts the route's cost recovery rate was 28%.

Table 26
Estimated Annual Impact of Seattle-South Kitsap POF Service by a Public-Private Provider

	No South Kitsap Service	Potential Impacts of South Kitsap Service				
Ridership on Non-WSF Service						
Number of vessels in service	0	1	2	3	4	5
Estimated annual ridership	0	162,018	324,036	486,054	648,073	781,413
Ridership drawn from WSF routes	0	135,015	270,030	405,045	540,060	651,178
Annual Financial Impact to WSF	$0	($456,351)	($874,433)	($1,139,629)	($1,404,826)	($1,623,083)
Impact to WSF Vashon-Seattle POF Service						
Lost riders to Non-WSF South Kitsap service	0	135,015	243,000	243,000	243,000	243,000
Total riders on Vashon-Seattle POF	406,118	271,102	163,118	163,118	163,118	163,118
Revenue impact due to transfers from WSF	$0	($456,351)	($821,340)	($821,340)	($821,340)	($821,340)
Net farebox revenues	$1,332,066	$889,216	$476,952	$476,952	$476,952	$476,952
Total operating costs	($2,784,829)	($2,784,829)	($2,784,829)	($2,784,829)	($2,784,829)	($2,784,829)
Operating surplus/(shortfall)	($1,452,763)	($1,895,613)	($2,307,877)	($2,307,877)	($2,307,877)	($2,307,877)
Farebox recovery	48%	32%	17%	17%	17%	17%

Assumptions
- 2004 dollars
- Non-WSF service is assumed to be provided using a fleet of 149-passenger vessels
- Two four-hour shifts
- Induced demand is 20%

Source: Washington State Ferries, Berk & Associates, 2004

As these metrics suggest, the viability of WSF's Seattle-Vashon POF route could be called into question given such reductions in ridership and cost recovery performance. Under these conditions, route options for WSF would include:

- Continuing service after investing in more suitable vessels to replace the Skagit and Kalama, utilizing a smaller (149-passenger) vessel to improve the economics of the service.
- Leaving the POF business, limiting WSF service to the Vashon market to the Fauntleroy-Vashon passenger-vehicle route.
- Allowing the Vashon market to be served by a new public sector operator, such as King County. At the direction of the King County Council, the County is currently engaged in a *Waterborne Transit Policy Study* to assess under what conditions it may be appropriate for King County to provide Seattle-Vashon POF service.

Longer-term Service and Facility Considerations. As previously discussed, a successful public-private POF service operating between South Kitsap and Seattle may not provide enough long-term congestion relief at Fauntleroy Dock and may reduce the options for solving service challenges in the South Sound. One of the most promising long-term options for WSF under consideration is to eventually bring Southworth passenger-vehicle service directly to downtown Seattle instead of into the congested Fauntleroy Dock.

This issue is being evaluated as part of the Ferry System's Long-range System Plan, a draft of which is expected by mid-year 2005. In the event that the Plan concludes that the best long-term option in the South Sound is to split the current passenger-vehicle triangle service and bring Southworth passenger-vehicle vessels to Colman Dock, then any public-private POF operation in this market would likely face significant financial challenges. A direct passenger-vehicle service between Southworth and Seattle would provide the most reliable and highest capacity long-term solution for foot passengers in this market.

7.4 WSF Options Assuming a Public-Private South Sound Service

If the UTC grants an operating certificate to one of the prospective operators in this corridor, WSF would need to reconsider its service options to meet demand during the next ten years. With a South Kitsap to Seattle operation drawing a significant share of Southworth commuters, WSF would be left to serve the Vashon market, the South Kitsap vehicle market and riders wanting to go to West Seattle versus downtown. The biggest impact to WSF planning would be on the Seattle-Vashon POF route, where approximately half of the current riders are coming from the South Kitsap market.

A successful public-private operation would likely draw most of the South Kitsap riders from the current Vashon POF route, leaving only the Vashon market. The effect of this change would be to reduce expected annual ridership to approximately 85,500, assuming only two sailings in each of the morning and afternoon commute periods. As a result, when it is time to replace the Skagit and Kalama, it would make sense to shift to a smaller vessel to make the route more cost-effective.

A key question for WSF is whether a scenario that combines a public-private operation serving South Kitsap with a scaled back Vashon service offers a more cost-effective solution in the South Sound. To address this question, Table 27 presents a comparison of this scenario with the POF Triangle operation.

Key findings from the comparative analysis in Table 27 include:

- Changing to a 149-passenger vessel and operating with split shifts would result in lower operating costs for WSF, a savings of approximately $1.5 million per biennium.
- There is virtually no difference in capital costs for WSF between the two scenarios.
- With the current fare structure and lost ridership there would be a loss in fare revenue on the Seattle-Vashon POF service of approximately $1.9 million per biennium.
- For both the POF Triangle operation and the Non-WSF South Kitsap scenario there will be riders switching from existing WSF routes to the POF service. For the Triangle route, approximately $90,000 of fare revenue would be simply shifted from other WSF routes to the POF service. In the Non-WSF scenario, approximately $450,000 is expected to be shifted from WSF routes to the public-private operator with a one-boat operation. As the Non-WSF operation grows, the revenue shift would increase.

The net effect of a public-private operation in the South Kitsap market is that subsidy requirements for the Seattle-Vashon POF service would be immediately higher. Subsidy requirements would likely increase over time, particularly with any increase in service by the Non-WSF operator.

Table 27
Comparison of WSF South Sound POF Scenarios with and without Seattle-South Kitsap POF Service

	Implement WSF South Sound Triangle POF Service	South Kitsap Service Provided by Non-WSF Operator, Modify WSF Vashon POF Service
Service Characteristics		
Operations	One 8-hour split shift	One 8-hour split shift
Vessels in service	One 350-passenger vessel	One 149-passenger vessel
WSF Capital Investment in 2005-7 Biennium		
Description	Deploy Snohomish, Chinook; improve Southworth and Vashon terminals	Replace Skagit and Kalama with two 149-passenger vessels
Capital to restart vessels	($1,200,000)	-
Capital to purchase new vessels	-	($10,000,000)
Net proceeds from sale of POFF	-	$6,920,000
Capital to improve terminals	($1,800,000)	-
Total capital required	($3,000,000)	($3,080,000)
WSF Finances for 2007-9 Biennium		
Ridership		
Total annual ridership	333,623	85,586
Number of 4-hour peak sailings	2	2
WSF Operating Finances for Biennium		
One-way fare (commuter rate)	$3.80	$3.28
Fare revenue	$2,536,000	$650,000
Operating costs	($3,525,000)	($2,044,000)
WSF operating surplus/(shortfall)	($989,000)	($1,394,000)
Revenue loss from WSF transfers	($90,000)	($456,000)
Total WSF surplus/(shortfall)	**($1,079,000)**	**($1,850,000)**

Assumptions

- Figures are in 2004 dollars
- Net proceeds from sale of Chinook and Snohomish are based on an assumed $4M per vessel purchase price less sales costs assumed to be 10% and $1M in capital costs to prepare for sale.
- Revenue loss is based on a public-private one-boat operation serving South Kitsap-Seattle additional service would result in greater number of transfers and higher revenue losses
- Estimates for current service configuration assume continuation of current fares. Fares for expanded/enhanced service are assumed to be $1.00 more per round trip.

Source: Washington State Ferries, Berk & Associates, 2004

7.5 Federal Funding for Central Puget Sound Passenger Ferry Service

The proviso requests "recommendations for the most effective use of federal funding opportunities for integrated passenger ferry service in the Central Puget Sound." This section relates to the impacts of diversifying federal ferry funding beyond WSF to include other public and private ferry providers.

Background. Over the past six-year authorization period of TEA-21, the federal authorizing legislation for transportation funding, WSF received nearly $100 million, or approximately 20% of its capital program. WSF receives federal funding for vessels and terminals through several avenues:

- Tea-21 Authorization, which had set aside $5 million annually for WSF for vessels and facilities. WSF is hoping to increase that funding level in the next Reauthorization Bill.
- Annual earmarks, which are direct Congressional requests considered on a competitive basis. The primary funding source for the earmarks is the Ferry Boat Discretionary (FBD) Fund, administered by the Federal Highway Administration (FHWA). A secondary source for earmarks has been the Federal Transit Administration's Section 5309 Bus Capital program.
- National discretionary funding distributed competitively through the Transportation Security Administration's Port Security Program.
- Regional discretionary funding distributed through the Puget Sound Regional Council, which is also competitive.
- Federal Transit Administration formula funding which is distributed to transit service operators annually through the Puget Sound Regional Council via a formula based on transit service delivered.

Annual Federal Earmarks. There is a limited amount of money available nationally through the earmarking process. The FBD Fund, for instance, distributes about $18 million per year in discretionary funds. WSF has historically done well in securing funding through this competitive process, however the agency now finds itself in competition with Kitsap Transit and potentially other agencies for funding from the same source. Kitsap Transit has an ambitious federal funding plan for its POF program:

- $6.0 million requested in federal FY 2005, including $4.5 million for Seattle-Bremerton POF vessel and terminal improvements and $1.5 million for planning and design of a South Kitsap POF terminal.
- $2.0 million requested for federal FY 2006.
- $12.0M will be requested in federal FY 2007 for the design-build acquisition of four 149-passenger ferries.

For federal FY 2005, WSF requested $25.8 million in earmarks from the state's Congressional delegation; $10 million of that request was for WSF's new vessel construction program. That project was not funded. In fact, WSF only received $750,000 through the earmarking process in 2005. In contrast, Kitsap Transit received $1.75 million of its $6.0 million request for its POF vessel construction program from the FBD program.

There are many factors that influence the federal discretionary grant programs. Geographic equity is one; there is a desire to distribute the money to worthy projects in a variety of states and agencies. Therefore, agencies within each state can be competing for the same limited pot of funding. If Kitsap Transit or other agencies continue to receive funding from the discretionary accounts, WSF's capital program and schedule will be adversely affected.

The Washington delegation is advocating for doubling or tripling of the FBD funding in the Tea-21 Reauthorization. If this funding increase occurs, the level of funding available nationwide and to Washington could increase, potentially mitigating some of the effects of inter-agency competition.

8.0 CONCLUSION: TEN-YEAR STRATEGY AND IMPLEMENTATION PLAN

8.1 Vision and Ten-Year Passenger Strategy

This analysis has assessed WSF's operating and financial situation and challenges, existing and forecasted passenger capacity on its passenger-vehicle boats, ridership demand for potential new routes, and vessel and terminal improvement costs associated with an enhanced POF program. An important finding of the analysis is that WSF has significant passenger-carrying capacity on its Central Puget Sound passenger-vehicle ferries, and with a few exceptions will continue to have excess capacity through 2015, even in the westbound 4-hour P.M. peak period and in the 1-hour "peak of the peak" commute period. Until WSF's passenger-vehicle and terminal capacities are reached, and with relatively low marginal costs of carrying passengers (e.g. some terminal staff for overhead loading and fare collection), the most efficient and cost-effective means of moving passengers across Puget Sound is via WSF's large passenger-vehicle boats.

Based on WSF's strategic and operational situation and the range of options for moving people across Puget Sound, including multimodal transportation options, this report suggests that an optimal ten-year passenger strategy for WSF will be based on the following four guiding principles:

1. Cost-effectively utilize WSF's existing assets and passenger-carrying capacity, including passenger-vehicle vessels and terminals.
2. Leverage the region's multimodal transportation infrastructure and investments.
3. Help mitigate bottlenecks and chokepoints in WSF's system, to increase overall network efficiency.
4. Be operationally and financially sustainable, to enable ferry riders and communities to make long-term employment and location decisions.

The Vision and Strategy which best meets these objectives is for WSF to:

A. Continue to serve the Clinton market through the Clinton-Mukilteo passenger-vehicle route, with connecting service to Seattle via Sounder commuter rail service.

B. Continue to serve the North Kitsap market through the Seattle-Bainbridge and Edmonds-Kingston passenger-vehicle route, also with connecting service to Seattle via the Sounder at Edmonds. Respect the service plan and operations of Kitsap Transit and its private operator, which have begun direct Seattle-Kingston POF service, but do not invest state resources in this service.

C. Develop a South Sound POF Triangle route to serve WSF's existing markets at Vashon and Southworth. Consider this initiative as a potential transition strategy to evolve toward Seattle-Southworth passenger-vehicle ferry service, an option being studied in WSF's Long-Range Planning process. Implementation of a POF Triangle route will require WSF to:

   - Make improvements to the Chinook and Snohomish necessary to redeploy them.
   - Proceed with terminal improvements to begin the service as expeditiously as possible.
   - Operate in two 4-hour split shifts to accommodate two peak period trips and keep operating costs at or below the current Seattle-Vashon service.
   - Increase fares on the route by $1.00 per round trip.

D. Recognize and address the economics of sustainable POF operations by working with WSF's fleet unions to implement split shifts or part-time schedules and other work rule changes to allow WSF to match service hours to peak period ridership demand.

E. Develop a reliable and sustainable POF service plan, including ongoing funding, that will allow WSF customers to make employment and housing choices based on predictable WSF service.

If Seattle-South Kitsap POF service is implemented by a public-private provider, WSF's South Sound POF Triangle route would not be feasible, and WSF would need to restructure its existing Seattle Vashon POF service to reflect reduced ridership and cost recovery on the route. Under these conditions, Seattle-Vashon POF options for WSF would include:

- Continuing service after investing in more suitable vessels to replace the Skagit and Kalama, utilizing a smaller (149-passenger) vessel to improve the economics of the service.
- Leaving the POF business, limiting WSF service to the Vashon market to the Fauntleroy-Vashon passenger-vehicle route.
- Allowing the Vashon market to be served by a new public sector operator, such as King County. At the direction of the King County Council, the County is currently engaged in a *Waterborne Transit Policy Study* to assess under what conditions it may be appropriate for King County to provide Seattle-Vashon POF service. This study, which will be completed in 2005, is consistent with earlier legislative requests [HB 2474, Section 223(6)] to study the potential for private or public partners to provide passenger-only ferry (POF) service to Puget Sound communities.

8.2 Near-Term Implementation Plan for the 2005-07 Biennium: Assuming South Sound POF Triangle Implementation

To implement the South Sound POF Triangle route in the 2005-07 biennium approximately $3.0 million in capital funding will be required: $1.2 million for Chinook and Snohomish start-up costs and $1.8 million in terminal improvements. These investments are sufficient to support initial POF operations with service provided by a single vessel operating in two 4-hour periods, to serve morning and evening peak demand. Required terminal improvements are:

Southworth: Modify existing wingwalls and construct a mooring dolphin. (Cost estimate: $1 million)

Vashon: Upgrade POF tie-up by adding a raised landing platform on the existing float and constructing a mooring dolphin and fender. (Cost estimate: $800,000)

ATTACHMENT A
PROVISO FROM BUDGET BILL (ESHB 2474, SECTION 506)

A new section is added to 2004 c 360 (uncodified) to read as follows:

Washington state ferries are more than a symbol of the state's natural beauty and economic vitality. They also are a critical component of our state's transportation system, serving as an extension of our land-based highways and transit systems, connecting Washington's people, jobs, and communities.

The investments made in the 2003 transportation funding package provide the foundation for a marine transportation system that coordinates Washington's cross-Sound marine transportation and our land-based transportation alternatives to create a fully integrated marine/land multimodal transportation system. Achieving this will require the development of a long-range vision and supporting strategy that will provide the policy guidance to define and maximize efficient delivery of quality marine transportation service to the traveling public.

(1) To accomplish this, the Washington state department of transportation shall develop a vision statement and 10-year strategy for the future development of Washington's multimodal water-based transportation system.

(a) This strategy shall recommend the most appropriate means of moving foot passengers across central Puget Sound, using Washington state ferries, alternative operators, or a combination of both, in the immediate future and over the longer term:

(i) Giving priority to those routes where passenger service likely will be provided at least for the near term on passenger vessels operated by WSF, such as Seattle-Vashon, Seattle-Kingston, Seattle-Southworth, and Seattle-Clinton. Consideration shall be given to existing public-private partnership opportunities;

(ii) Considering how service patterns will best fit in the near and long term with development goals and opportunities of Colman Dock as a major hub for integrating water transportation with other transportation modes in downtown Seattle;

(iii) Evaluating how operating economies and reasonable fare box recoveries can be established by scheduling A.M. and P.M. services to match commuter demand and to fit within existing collective bargaining agreements as interpreted and applied to facilitate "split shift" transit-like operations; and

(iv) Providing a vessel plan that most efficiently uses existing state ferry assets and provides for their likely repair and rehabilitation needs, while preserving flexibility to structure services around vessel availability that could rely on purchase or lease of additional vessels, as may suitably be required.

The strategy shall also consider the availability of partnering in operations, vessel deployment, or funding arrangements with other public transportation entities and with the private sector. The study shall also recommend the most effective use of federal funding opportunities for the overall support of integrated water transportation services on the central Puget Sound.

(b) Other components of the strategy shall include but not be limited to:

(i) A long-term plan for the ferry system's existing terminals, considering the revenue generation opportunities and potential for partnering with the private sector where appropriate. This should include a plan for generating other revenues as identified in the 2003 5-5-5 plan; and

(ii) A more equitable fare structure for the San Juan Islands, particularly for island residents.

(2) The department shall consult with key public and private sector stakeholders including business, labor, environmental community representatives, local governments, and transit agencies as part of the development of the vision statement and supporting strategy.

The long-range strategy should also recommend a short-range implementation plan for the 2005-07 biennium. The department shall provide its recommendations to the transportation committees of the legislature.

ATTACHMENT B
LIST OF PROJECT STAKEHOLDERS

The following stakeholders participated in the development of the Vision and Ten-Year Passenger Strategy for Washington's Multimodal Ferry System, by contributing their organization's or constituency's perspectives in an interview and/or at one or more of the stakeholder meetings.

Representative	Organization
Private Operators	
Jim Boldt	Aqua Express
Greg Dronkert	Kitsap Ferry
Local Governments	
Grace Crunican	City of Seattle
Tim Ceis	City of Seattle
Richard Conlin	City of Seattle
Mary McClure	Kitsap Regional Coordinating Council
Mike Morton	Island County RTPO
Mike Shelton	Island County
Ann Sutphin	City of Seattle
Labor	
Gordon Baxter	Legislative Relations for WSF Trade Unions
Captain Steve Brickley	Masters, Mates and Pilots
Dennis Conklin	Inlandboatmen's Union
Captain Darryl Kimmerly	Masters, Mates and Pilots
Terri Mast	Inlandboatmen's Union
Marty Micomonaco	Marine Engineering Beneficial Association
Captain Mike Murray	Masters, Mates and Pilots
Jay Ubelhart	Inlandboatmen's Union
Transit Agencies	
Shelia Dezarn	Sound Transit
Eric Gleason	King County Metro
Dick Hayes	Kitsap Transit
David Hull	King County Metro
Paul Matsuoka	Sound Transit
Matt Shelden	Sound Transit
Alice Tawresey	Marine Transport Association of Kitsap
Environmental Organizations	
Rob Johnson	Transportation Choices Coalition
Teri Shore	Blue Water Network
Heather Trim	People for Puget Sound
Don Willot	Feet First
Tribal Representatives	
Darryl Williams	Tulalip Tribe

ATTACHMENT B
LIST OF PROJECT STAKEHOLDERS (CONTINUED)

Citizen Organizations	
Martha Burke	Bainbridge Island Ferry Advisory Committee (FAC)
Fred Chang	Bremerton FAC
Bob Distler	San Juans FAC
Sally Fox	Vashon FAC
Jimmy James	Kingston FAC
Vicki Mercer	Vashon FAC
Ian Munce	Anacortes FAC
Marjorie Rees	Southworth FAC
Mike Sudduth	Vashon FAC

ATTACHMENT C
STAKEHOLDER MEETING SUMMARIES

Stakeholder Meeting Summary #1
Puget Sound Regional Council Boardroom
October 25, 2004

Attendees:

Gordon Baxter, Legislative Relations for WSF Trade Unions
Jim Boldt, Aqua Express
Captain Steve Brickley, Masters, Mates and Pilots
Dennis Conklin, Inlandboatmen's Union
Bob Distler, San Juan Islands FAC
Greg Dronkert, Kitsap Ferry
Eric Gleason, King County Metro
Dick Hayes, Kitsap Transit
David Hull, King County Metro
Jimmy James, Kingston FAC
Rob Johnson, Transportation Choices Coalition
Captain Darryl Kimmerly, Masters, Mates and Pilots
Terri Mast, Inlandboatmen's Union
Mary McClure, Kitsap Regional Coordinating Council
Vicki Mercer, Vashon FAC
Marty Micomonaco, Marine Engineers Beneficial Association
Captain Mike Murray, Masters, Mates and Pilots
Matt Shelden, Sound Transit
Teri Shore, Bluewater Network
Mike Sudduth, Vashon FAC
Ann Sutphin, City of Seattle
Alice Tawresey, Marine Transport Association of Kitsap County
Heather Trim, People for Puget Sound
Jay Ubelhart, Inlandboatmen's Union
Don Willot, Feet First

Washington State Department of Transportation

Ray Deardorf
Celine Gihring
Sam Kuntz
Celia Schorr

Berk & Associates

Bonnie Berk
Courtney Knox
Marty Wine

Welcome, Meeting Purpose and Introductions

After brief introductions, Ray Deardorf reviewed the meeting agenda. The purpose of the meeting is to provide an overview of the Legislature's request of Washington State Ferries (WSF) to develop a ten-year Passenger Strategy for the State's Multimodal Ferry Transport System, to share information on work planned and accomplished to-date, and to obtain stakeholder perspectives on the project.

Overview of Project Objectives, Tasks, Schedule

Marty Wine provided an overview of the project schedule and key tasks. WSF's response to the legislative proviso is due December 15th. Through mid-November, the project team will conduct analysis of demand and prepare a demographic profile of ridership to assess route and service options. Stakeholder and WSF input will help to determine what WSF's passenger philosophy should be. The recommended Vision and options for achieving that Vision will be presented to the State Legislature.

Meeting participants asked several questions regarding the scope of the project and relationship to other WSF projects:

Q: How will this Passenger Vision integrate with the 20-year Long-Range Plan WSF is in the process of developing?

A: These two plans are being developed separately, and will inform each other. The Passenger Vision/Strategy will answer questions for the Long-Range Plan and may be modified as result of the Long-Range Plan. There are also several other projects occurring simultaneously, including the Colman Dock Master Plan and Environmental Impact Statement. Efforts are underway to coordinate the analysis and results of each study.

Q: Does this project have a larger scope than the proviso?

A: The proviso was translated into the scope of work for the Passenger Vision/Strategy project. The scope of this project mirrors the dimensions of service discussed in the proviso. It is important to note that the proviso language does not prescribe the technology for moving passengers across the Sound.

Q: With private sector service running parallel to WSF, how much do you allow for local operators to improve connectivity?

A: This is not viewed as a conflict; the services will be integrated.

Q: What will the product of this effort be?

A: The product will be a detailed analysis, a series of options based on analytic findings, and a report summarizing the methodology, findings and recommendations. In early December, following a second stakeholder meeting, the draft report will be submitted to WSF's Planning Director.

Overview of Stakeholder Interview Perspectives on the Vision

Bonnie Berk reviewed seven alternative Visions for passenger service, derived from a series of stakeholder interviews. Each Vision suggests a different role for the State and for regional and/or local transit agencies, and allows for varying levels of passenger ferry service. Stakeholder perspectives on the State's role in passenger service provision ranged from a limited or nonexistent role to increasing the State's role in providing all passenger ferry service. Other Visions described coordination of service led by a regional or local agency.

In a roundtable discussion, each stakeholder was asked to contribute their perspective and Vision for passenger service.

Comments: Key Project Perspectives and Issues

- What kind of service is needed? Who should provide it? Those are two separate issues.
- Starts with limited service in limited areas; grows over time with demand as the market develops.
- I have a hunch that there is a need. Provide the service as the need grows. The Vision could address the changing need for service.
- Service relates directly to available funding.
- Vashon is working to quantify basic needs for service and freight movement service needs. If passenger-vehicle boats dock south of downtown, they won't connect with transit.
- Vashon has a reverse commute. Point Defiance should be considered as a destination.
- Different service options should be considered for different locations.

- Transportation is about rationing; it relates to political will and funding capacity.
- Passenger service relates to available transit connections. It makes sense to have walk-ons walk into downtown.
- End point and destinations should be part of a Vision.
- Consider splitting passenger and passenger-vehicle ferries; offer different service during peak hours compared to all day service.
- Passenger-vehicle boats are passenger boats as currently configured. This has fare implications, too – vehicles can subsidize passenger fares on some routes.
- Terminals should be located close to each other.
- Consider bicycles in planning facilities. This is a big part of the landside connection.
- Address the issue of sustainability for passenger service. WSF has experienced fits and starts in providing service and now the private operators are providing service. People won't make housing or employment decisions if funding and continuity of service are in question.
- If Fauntleroy were closed, our survey results are showing that people would move off Vashon Island.
- In the San Juan Islands a few years ago, we had a 20% increase in fares and people were saying we'd see a dramatic increase in the price of goods. It didn't happen.

Overview of Technical Analyses – Tasks in Progress and Forthcoming

A series of technical analyses will support development of the Vision, including analyses of ridership forecast data, comparative agency survey data, service provision and demand scenarios, economic and demographic profiles of ridership, financial and funding scenarios, and governance, ownership and operating structures. Findings from the demand and capacity analysis, ridership demographic profile, financial and governance analyses will be presented at the next stakeholder meeting.

Ray Deardorf provided a brief overview of ridership forecast data. PSRC data informs the base set of assumptions for forecasts of demand for POF service to 2020 and 2030. Demand is provided in a range; the lower estimate assumes a doubling of the Central Sound passenger fare, and the higher estimate assumes Central Sound fares increase one and a half times above current fares. Ridership forecasts estimate westbound afternoon peak trips for May[1] and examine how ridership would shift in response to different route and service scenarios. For example, in the future, the Seattle to Kingston route is competing with the availability of half-hour multimodal service at the Mukilteo Terminal.

Q: What does the model assume regarding access to the vessels?

A: Four access and egress combinations were analyzed in the Origin and Destination Travel Survey. The survey results in a trip table for each mode. The mode choice is then pushed out onto roads. The model does take into account passenger access. Our model assumes 2020 and 2030 transit access, consistent with PSRC modeling. The regional model, at this stage, has not assumed bike or longer distance walking trips to access terminals. Once this is done on a regional level, other models will make modifications to match the assumptions.

Comments:

- The model uses transit walking distances. It should be using a light rail walking distance which assumes passengers will walk twice as far to access the service.
- King County will study waterborne transit through June or July 2005. We'll be looking at service in and around Lake Washington, Lake Union, Vashon and the Elliott Bay water taxi with

[1] Any fare adjustments would be implemented in mid-May.

a focus on landside connections. We'll be providing recommendations regarding when and under what conditions King County should provide ferry service.
- This study should make a very clear statement that the model doesn't address bike traffic.

Bonnie Berk reviewed the scope of the comparative passenger ferry and transit operator survey. The intent of the survey is to assess and summarize the experience of other passenger ferry and transit operators' experience with changes in ridership, revenue, cost, and labor practices. Each system included in the scope of the survey is of unique interest given one or more aspects of their operations or management strategy. Golden Gate Ferry, Vallejo Ferry, Water Transit Authority and New York Waterways are being surveyed.

Comments:

- Passenger-vehicle ferries are also in the business of transporting passengers. These are all POF strategies. Can you expand the survey to include other providers?
- Interview BC Ferries – they run both passenger-vehicle and passenger-only boats. Try Alaska ferry service, too.
- Consider adding Staten Island Ferry. They serve passengers and no longer carry vehicles into Manhattan.
- Consider adding Woods Hole Ferry Service (to Martha's Vineyard and Nantucket), even though they don't have a commuter focus.
- Explore how these ferry systems make decisions between both modes of passenger service, and the type of considerations made when examining trade-offs between services.
- For the 20-Year Plan, consider interviewing local cities to identify landside issues and impacts, such as road and land connections and land use. For the 20-year Plan, look at the Staten Island Ferry. That started as a balanced vehicle and passenger service. (It is now a huge POF service on very large boats.) As Seattle's density increases, we could see a similar change in service provision.

Comments on the Project and the Passenger Service Vision

At the end of the meeting, each stakeholder was asked to share individual perspectives on the project and their Vision for passenger ferry service.

- The Marine Transportation Association of Kitsap has a stated position on passenger service.
- I have concerns regarding the forecasting methodology and laminating it onto the transportation infrastructure by hour and by volume. Where are the bottlenecks? How do people complete their trips? Are we looking at unconstrained demand or assuming existing infrastructure?
- Impacts to WSF are called out. I would like to see terminals and other capital investments included.
- Environmental impacts should be included as part of the Vision.
- Lack of sustainability creates uncertainty for providers and ferry communities. I would like to see short- and long-term solutions developed.
- We view Seattle's waterfront as a gateway. As such, increasing and focusing transit downtown is key and landside coordination is critical. Plan for the full trip.
- Show comparison of the subsidy of motor vehicles to the subsidy of ferry vessels. Look at tourism in the projections. I am concerned that the model seems to project continued similar transportation patterns. Plan for potential increases in non-motorized uses.

- I have concerns regarding the forecasting. Landside providers can share their assumptions to complement the modeling effort.
- How do we make this work? One size will not fit all. We can try to do the best we can for each community. To do so, it will be important to keep this kind of dialogue and communication going.
- The forecasts are not as accurate as they could be at the sub-corridor level. There is competition for federal funding among providers now.
- The State is in the business. I'm encouraged by the King County effort. It will take a group to provide this service.
- Vashon has already taken service cuts. We need to look beyond moving passengers to the provision of critical services for Island life.
- Plan for the full trip. Landside connections will help passenger service happen.
- I am concerned that enhanced passenger boat service will potentially create more wakes.
- WSF is looking at options for budget cut scenarios. WSDOT, as a whole, is projecting a revenue shortfall of approximately $100 million. For WSF, the cost increases are largely related to changes in fuel and labor costs since the budget was submitted. Costs associated with fuel, labor and security are all subject to change.
- We should be talking more about the potential public subsidy of a private service.
- Efficiency is important. There are savings with less duplication of service.
- The design of boats should be informed by people who run the vessels. The Vision should address buses and/or light rail connections.
- Unions are willing to work with alternate types of service to help provide the service.

Summary of Discussion and Next Steps, Next Meeting

Bonnie Berk thanked meeting participants for their thoughtful consideration of the key issues and pointed to the range of perspectives among stakeholders. In the coming weeks, there will be continued dialogue and discussion of findings from the technical analyses to inform the development of a Ten-Year Passenger Strategy. Next Steps:

- Transportation Commission briefing at the November 16-17 meeting.
- Stakeholder Meeting #2 will be held on November 29 from 2 P.M. to 4 P.M. at the Kitsap Conference Center in Bremerton.

The meeting adjourned at 3:00 P.M.

Stakeholder Meeting Summary #2
Kitsap Conference Center
November 29, 2004

Attendees:

Gordon Baxter, Legislative Relations for WSF Trade Unions
Jim Boldt, Aqua Express
Martha Burke, Bainbridge Island FAC
Fred Chang, Bremerton FAC
Bob Distler, San Juan Islands FAC
Greg Dronkert, Kitsap Ferry
Dick Hayes, Kitsap Transit
Vicki Mercer, Vashon FAC
Marjorie Rees, Southworth FAC
Matt Shelden, Sound Transit
Teri Shore, Blue Water Network (by phone)
Ann Sutphin, City of Seattle
Mike Sudduth, Vashon FAC
Alice Tawresey, Marine Transport Association of Kitsap
Heather Trim, People for Puget Sound

Washington State Department of Transportation

Doug MacDonald
Mike Anderson
Ray Deardorf

Berk & Associates

Bonnie Berk
Michael Hodgins
Brian Murphy
Michael Regnier

Welcome, Meeting Purpose and Introductions

Bonnie Berk welcomed all participants, and Ray Deardorf reviewed the meeting agenda. The purpose of the meeting is to review the work conducted since the previous stakeholder meeting on the ten-year Passenger Strategy for the State's Multimodal Ferry Transport System, and to hear about and discuss the analytic findings that have emerged from that work. Brief introductions were made. Bonnie Berk facilitated questions and answers during the presentations.

Review and Discussion of Analysis and Draft Findings

Michael Hodgins summarized the Current Situation Assessment. Passenger-Only Ferry (POF) service has played a small but targeted role in WSF history, accounting for about 330,000 of the 5.3 million WSF foot passengers in FY 2002. After Initiative 695, WSF reduced its POF service to a single route (Seattle-Vashon) on weekdays only. WSF owns four POF vessels; two are in use but near the end of their useful lives, while two others—purchased new for $22 million—are out of use and in need of refurbishment. WSF's 10-Year Plan includes a commitment for operating funds for the current Seattle-Vashon service, although actual funds are approved on a biennial basis. There are no capital commitments to replace the aging POF vessels. After the Legislature encouraged public-private partnerships, Kitsap Transit has taken a leadership role in working with private operators to develop new POF services. It has entered into Joint Development Agreements with two operators, and is in discussion with two others.

There was discussion about why the study considers certain routes and does not consider others; Bonnie Berk explained that all the routes were specified in the legislative proviso.

Michael Hodgins reviewed the analytical tasks conducted so far. They include an assessment of the current situation (including stakeholder perspectives, legislative history, public and private POF service in the region, and comparable agencies' operations); a route-specific ridership and market analysis based on long-term forecasts; an analysis of the capital and operating requirements for continued and

expanded POF service by WSF, based on assessments of WSF vessels and terminals; and a draft of the Vision and Ten-Year Strategy as required by the legislative proviso. He noted that much of this work has been done in concert with work on the WSF Long Range Strategic Plan.

Michael Hodgins next described the analytical approach. As directed by the proviso, the analysis examines options for "the most appropriate means of moving foot passengers across central Puget Sound," focusing on routes to downtown Seattle from four market areas: Vashon, Southworth, Kingston, and Clinton. Each route is examined in four steps. First, ridership through 2030 is projected, based on forecasts by the Puget Sound Regional Council and the 1999 Travel Survey by WSF. (The projections are based on certain assumptions about demographic changes, land use, and coming improvements to the regional transportation system.) Secondly, taking demand on each route as a given, the characteristics of service to meet that demand—in terms of trip frequency and vessel size and number—are determined. Third, the ridership analysis and service characteristics are assessed to determine the baseline viability of the route. Fourth, those routes determined to be potentially viable are examined in greater detail, with attention to costs, revenues, and cost recovery rates. After the route-by-route analysis, the analysis turns to options for travel sheds (groups of interrelated routes) and impacts across the entire WSF System.

Q: What do you mean by "baseline viability"? Aren't there other variables that are being left out?
A: Baseline viability is a rough estimate of on-water cost recovery for service, on-water. These are gross-level assessments, to provide an initial cut.

Q: Does the analytical model use one- or two-direction fares?
A: The model does not distinguish. It does assume that ferry passengers ride round-trip.

Q: Does the analytical model include expected increases in parking costs?
A: The regional data upon which the model is based does.

Q: Does the model show induced demand, i.e. people who would be induced to become passengers by the new service?
A: No. This is something that can be added before the analysis is concluded.

Brian Murphy presented the draft Market Analyses for each of the four routes. The Seattle-Clinton route is twice as long as most other POF routes under consideration, and demand is insufficient to achieve efficient utilization of vessel capacity. For these reasons, and because Seattle-Clinton passengers are already served by connections between the Mukilteo-Clinton passenger-vehicle ferry and Sound Transit, the State does not have an interest in providing this service.

The Seattle-Kingston route is a viable for POF service, and a private operator will begin service on December 26, 2004 under a Joint Development Agreement with Kitsap Transit. Because existing passenger-vehicle ferries meet the demand in a cost-effective manner, the State does not have an interest in entering this POF market during the ten-year planning period.

Demand for Seattle-Southworth ferry service is high, and will increase with the high population growth projected in Central and South Kitsap County. This route is a viable option for POF service, and Kitsap Transit is working on a joint development agreement to serve this market with a private operator. WSF currently serves this market via Vashon, but faces the impending need for vessel replacement, for which there is currently no capital funding identified.

Up to half of the passengers on the current Seattle-Vashon POF service are transfers from Southworth. Vashon is not a growing market area, and, with the addition of direct Seattle-Southworth POF service, an appropriate service solution for Vashon would have to be considered. King County plans to study the possibility of providing Seattle-Vashon POF service itself.

Brian Murphy next described the short-term service option that the market analyses suggest would be the most viable use of existing capital: a POF route around the "South Sound Triangle," from Seattle to Vashon to Southworth and back to Seattle. Such service would make use of the two relatively new POF vessels currently out of service (the Chinook and Snohomish), and would keep operating costs down by operating in two 4-hour split shifts during the peak commuting periods. This option would require expenditures for vessel refurbishment and terminal improvements at Vashon and Southworth, but would carry a number of benefits. These include an opportunity to recapitalize the POF vessels currently in operation on the Seattle-Vashon route (by replacing them with the Chinook and Snohomish), more direct service from Southworth to Seattle, continued service to Vashon (which would not be justified based on Vashon demand alone), and possible growth in the market for a potential future POF or passenger-vehicle ferry service directly between Southworth and Seattle.

Bonnie Berk briefly reviewed the Draft Vision, and noted that participants also received the Comparative Survey of passenger ferry and transit systems, which was not discussed due to time constraints.

Facilitated Stakeholder Discussion of Draft Findings, Vision and Strategy
In a roundtable discussion, all stakeholders were encouraged to contribute questions and comments.

Q: Does the analysis include an exploration of the parking situation in North Vashon?
A: No. Thank you for raising that issue.

Q: Would the Triangle POF service fit in with the existing passenger-vehicle ferry schedule?
A: Yes. The Triangle would be served by one vessel at a time, on a schedule that would not interfere with passenger-vehicle sailings.

Comments:

- I am concerned that this analysis underestimates induced demand. Many riders of the Seattle-Bremerton POF service seem to have vanished from the ferry System after that service was halted. Could not the same effect happen in reverse when new POF service is added?
- Calculations of induced demand should factor in the possibility that a new ferry route will lead to increased tourism.
- The report should discuss the implications for growth management, and local jurisdictions' need to comply with the Growth Management Act. Some environmentalists are worried that new ferry service will induce too much growth in certain areas.
- The analysis includes a fare assumption for Kingston POF service—1.5x the Central Sound route—that is too low. A premium service that takes less than 40 minutes will induce a great deal of demand for that route, causing ridership to go up to the point the market would bear a higher fare. The cost recovery projections for that route might look very different with better assumptions. Even if the State does not enter the market, unduly conservative estimates could scare off other providers.
- The analysis should be expanded to include more variation in price—e.g. price levels of 1.3 and 1.75—to fully understand the price sensitivity of potential passengers.

- The analysis should not assume 16 hour days, but should also model service using an 8 hour day, with two split shifts.
- A private operator approaching South Sound service would not confine its analysis to existing boats, but would look to add high speed ferries right away. Small boats with higher frequency would be a powerful option for South Kitsap service. WSF should not focus on the option of using 350-passenger vessels.
- The analysis should factor in the fares of on-shore connections such as buses.
- Section 1A in the proviso talks about the "most appropriate means." A narrow interpretation of the "State interest" is not responsive to that language. "State interest" should be given a broad meaning, not confined to services the State could operate or the finances of WSF. For example, ferry service to Bremerton would benefit growth in Bremerton, even if that benefit isn't captured by WSF.
- There seems to be some confusion about what a "State interest" is. It is not synonymous with public interest, but is a much narrower idea. For example, if there is unused foot passenger capacity on existing passenger-vehicle ferry routes, should the State add capacity on another, passenger-only, boat? Would that be a worthwhile investment of money? These are questions of State interest.
- I am concerned about what would happen if a private POF provider, the services of which are assumed in this analysis, pulls out of a market.
- If a private operator pulls out, there will still be a local option.
- The stability of service to Vashon affects the underlying demographics on Vashon. Since the service has been less stable, people buying homes in Vashon have changed from young people to retirees, according to Vashon real estate agents.
- Induced demand only occurs if potential passengers know service is stable forever. Service that is not dependable will not induce additional demand.
- Driving around is not the only alternative to Seattle-Kitsap ferry service; passengers from Kitsap County could take the ferry to Edmonds, walk to the train station, and take the Sounder to Seattle. The timing for passengers is at least as attractive as direct ferry service that way. The point is to get people out of their vehicles. It's important to think about connections on the King County side, and the report should reflect that.
- In the Triangle, there is a "water taxi" option: rather than sailing across the open Sound, a small boat could shuttle between Vashon and Southworth, while a bigger boat runs across to Seattle.
- It does not seem efficient to use two vessels that were purchased for $11 million each on a service that would only be run for 20 hours per week.
- If the Triangle Option is put in place, WSF is likely to find that 350-passenger boats are only filled to capacity on one or two runs per day, and are expensively empty during the rest of the day if the service expands beyond peak hours.
- The analysis should consider a "reverse" Triangle route, from Vashon to Southworth to Seattle.
- I am concerned about the vehicle congestion that exists from commuters who drive through the City of Bainbridge Island to reach the Bainbridge ferry. WSF should not pursue a plan that would aggravate this situation.
- In the report, each page of market analysis should include an estimate of the local and regional participation that would be required by a given POF service. The Legislature will not see the whole picture if this analysis shifts a financial burden to local jurisdictions without saying so.

- Before describing the Triangle Option, the report should describe the other options that were considered and rejected.
- The private sector is here for a reason. Private operators did not involve themselves in elections/debates about transportation and State spending, and the public has consistently indicated that it favors reduced public spending. The private sector cannot handle a "we're in – no, we're out" situation; such uncertainty harms its ability to raise capital, etc. WSF should seriously consider letting the privates work; give the Legislature something realistic, not a dream. The description of the Triangle Option should be in brutally clear English.
- An alternative should be presented that discusses partnerships with the private sector, and establishes that the State has an interest in assisting private ferry operators, e.g. by paying their landside costs.
- The report should show the projected demand for current service.
- The land part of multi-model is being left out. The report should make recommendations in this area, e.g. concerning connections to KC Metro Transit. It should also spell out the environmental impacts, per the proviso.
- The analysis should consider partnerships, per the proviso.
- The report should discuss Colman Dock. The City of Seattle has begun a planning process for Colman's future, and wants to encourage a comprehensive strategy. There is the potential for much greater landside coordination.

Summary of Discussion and Next Steps

Bonnie Berk thanked meeting participants for their time, thoughtfulness, and candor. She encouraged them to send any further comments, including on the Comparative Survey report that was distributed but not discussed.

The meeting adjourned at 4:10 P.M.

ATTACHMENT D
COMPARATIVE SURVEY OF PASSENGER FERRY AND TRANSIT SYSTEMS

INTRODUCTION

In support of Washington State Ferries (WSF) and the development of a ten-year Vision and Strategy for the movement of passengers across Puget Sound, this survey profiles the operations and ownership of comparable ferry and transit systems in the region and North America.

While WSF is among the world's largest ferry systems, the North American ferry industry extends far beyond Puget Sound. According to a study conducted by the Federal Highway Administration, in 2000 there were some 224 companies and public agencies operating ferries in the U.S., serving 113 million passengers and 32 million vehicles (Federal Highway Administration, *National Ferry Study*, 2000). Ferries are especially important in urban areas, in Canada as well as the U.S., where they work with land-based transit systems to ease road congestion and improve the daily commute for thousands of passengers.

This survey profiles six major ferry systems: WSF; three systems in the San Francisco area, one in New York City, and one in Vancouver, British Columbia.

- Washington State Ferries: A publicly owned and operated ferry system, currently operating one passenger ferry route (Seattle-Vashon)
- Golden Gate Ferry, San Francisco, CA: A publicly owned and operated passenger-only ferry system
- SeaBus, Vancouver, BC: A passenger-only ferry route operated by a publicly owned and operated bus company
- Water Transit Authority, San Francisco, CA: A new publicly owned passenger-only ferry system that may or may not contract with private operators in the future
- Baylink Ferry, Vallejo, CA: A publicly owned and governed passenger-only ferry system that contracts with a private operator
- NY Waterway, New York, NY: A private passenger-only ferry service that uses publicly-owned docks

The survey also summarizes key features of six transit authorities in Western Washington:

- King County Metro Transit
- Community Transit (serving Snohomish County)
- Pierce Transit
- Kitsap Transit
- Jefferson Transit
- Island Transit

SUMMARY OF FINDINGS

Financial Performance

Passenger Ferry System Recovery Rates

A key measure of financial performance is the farebox recovery (fare revenue to operating expense) rate. Table D-1 presents a summary of farebox recovery rates for the passenger-only ferry systems

surveyed. As the Table shows, farebox recovery rates range from 23.7% on the WSF Seattle-Vashon route, to 62% on Baylink Ferry.

Table D-1
Farebox Recovery Rates of Comparable Passenger-Only Ferry Systems in North America

	WSF Vashon-Seattle	Golden Gate Ferry San Francisco, CA	SeaBus Vancouver, BC	Water Transit Authority San Francisco, CA	Baylink Ferry Vallejo, CA	NY Waterway New York, NY
Farebox Recovery	23.7% (FY 2003)	30% (FY 2003)	Not available	Goal: 40%	62% (FY 2005 to date) adjusted*	Not available

*Baylink Ferry reports a farebox recovery rate of 72%. This rate excludes administrative costs borne by the City of Vallejo staff, equivalent to an estimated 13% of Baylink Ferry's total operating cost. Including these estimated costs reduces the FY 2005 recovery rate to approximately 64%. Including terminal rent and maintenance costs further reduces the rate to 62%. These estimates exclude all revenues and costs from concession sales, which accrue to the private contractor that operates the Baylink service.

Transit System Farebox Recovery Rates

Farebox recovery rates for transit agencies in Western Washington range from 22.6% for King County Metro Transit to 3.3% for Jefferson Transit. Because transit is primarily funded by voter-approved, local revenues, different transit systems can adopt different approaches to balancing ridership against fare collection. Island Transit, for example, does not recover any costs at the farebox because it does not collect fares, choosing to maximize ridership and avoid all fare collection costs.

Table D-2
Farebox Recovery Rates of Key Transit Systems in the Puget Sound Region

King County Metro Transit	Community Transit (Snohomish County)	Pierce Transit	Kitsap Transit	Jefferson Transit	Island Transit
22.60% (FY 2004)	17.60% (FY 2003)	14.00% (FY 2004)	9% (FY 2004)	3.30% (FY 2003)	N/A

Note: Fares and expenditures from van pools and Sound Transit service are excluded. Island Transit does not collect fares.

Ownership and Operation Characteristics: Public, Private, and Public-Private

Research into the varieties of ferry ownership and operating arrangements reveals a range of options and experiences:

- Golden Gate Ferry, a publicly owned and operated system, had to shore up its budget by cutting $1.5 million in costs this year.
- The largest private ferry system in the U.S., NY Waterway, has fallen into financial crisis. After 18 years of largely unsubsidized service on the Hudson River, the family-owned company prepared to cease operations and sought a take-over by a public agency before recently arranging to sell a large portion of its operations to a group of private investors.
- One of the highest farebox recovery rates among all the passenger ferry systems analyzed belongs to an agency that has pursued a hybrid model. Baylink Ferry, a service of the City of Vallejo, California, owns its vessels and docks, but contracts out almost all ferry operations duties to an experienced private contractor.

Fares and Ridership

Ridership on the ferry systems analyzed ranges from fewer than 800,000 annual passengers on Baylink Ferry to approximately 6 million on NY Waterway. One-way fares range from $1.50 on a projected Water Transit Authority route from San Francisco to Treasure Island (a 10-minute crossing), to $15 on a NY Waterway route from Belford, NJ to the West 38th Street terminal in Manhattan (a 40-minute crossing).

The full WSF Seattle-Vashon fare is $7.70 for a round trip. By comparison, the full fare for a two-zone round trip is $3 on a King County Metro Transit bus, $4 on a Sound Transit express bus, and $6 on the Sounder Commuter Rail.

Tables D-3 and D-4 below present the annual ridership and one-way full fares of the passenger-only ferry systems surveyed. Table D-5 presents the realization rates and frequent user discounts of each system.

Table D-3
Annual Ridership of Passenger-Only Ferry Systems in North America

WSF Vashon-Seattle	Golden Gate Ferry San Francisco, CA	SeaBus Vancouver, BC	Water Transit Authority San Francisco, CA	Baylink Ferry Vallejo, CA	NY Waterway New York, NY
201,142 (July 2003–September 2004)	1.5 million (FY 2003)	4.6 million (2003)	Goal: 8.2 million by 2025	680,542 (FY 2004)	Approx. 6 million (2004); Approx. 12 million (2002)

Table D-4
One-way Full Fares of Passenger-Only Ferry Systems in North America

WSF Vashon-Seattle	Golden Gate Ferry San Francisco, CA	SeaBus Vancouver, BC	Water Transit Authority San Francisco, CA	Baylink Ferry Vallejo, CA	NY Waterway New York, NY
$3.85	$6.15	$2.55*	$1.50-$7.00	$9.50	$3.00-$15.00

*Converted from Canadian dollars, at exchange rate of $0.85 US = $1 Canadian.

Note: Fares based on weekday rates for adult passengers without any discount.

Table D-5
Realization Rates and Frequent User Discounts
at Passenger-Only Ferry Systems in North America

Discount	WSF Vashon-Seattle	Golden Gate Ferry San Francisco, CA	SeaBus Vancouver, BC	Water Transit Authority San Francisco, CA	Baylink Ferry Vallejo, CA	NY Waterway New York, NY
Average Realization	$3.19 (FY 2004)	$3.56 (FY 2003)			$6.42 (FY 2004)	
Realization as Percentage of Full Fare	83%	58%	Not available	N/A	68%	Not available
Frequent Rider Discount	20 round trips with monthly pass: 32% discount	With ticket from ticket book: 37% or 46% discount, depending on route	20 round trips with monthly pass: 27% discount	Un-determined	20 round trips with monthly pass: 43% or 65% discount, depending on transit connection	Varies by route

Summary of Labor Practices in the Systems Surveyed

Workers at all the ferry and transit systems analyzed here are represented by labor unions, with the exception of Island Transit employees. The workforce at a passenger-only ferry system is typically divided into trades and represented by several different unions, while transit workers tend to share membership in a single transit union.

Ferry and transit systems' labor policies allow them varying levels of flexibility to respond to changing or uneven demand for service. "Minimum call-out rules" can be one source of flexibility; these provisions about the minimum number of hours pay an employee must receive for any shift can be as high as 8 hours (WSF), or as low as 2 hours (Pierce Transit). Another source of flexibility in some systems is "split shifts."

Assigning split shifts is tradition in some ferry systems, anathema in others. Splitting shifts—dividing individual employees' daily hours worked into two separate periods, to match the morning and evening peaks of commuter demand—has long been a labor practice at NY Waterway. Financial constraints at the Water Transit Authority are likely to make split shifts necessary for some of its new routes. At Golden Gate Ferry, the Inlandboatmen's Union Local in San Francisco has made avoiding split shifts a priority, in past contracts even arranging staggered long-day/short-day schedules to accommodate the mid-day gap. Baylink Ferry, whose workers are affiliated with the same Local, also does not employ split shifts. SeaBus also does not use split shifts.

With local transit service, by contrast, split shifts are the rule. Community Transit, Kitsap Transit, King County Metro Transit, and Pierce Transit all run split shifts regularly and have for many years, although they have recently become less common at Pierce Transit. The more rural Island Transit and Jefferson Transit systems also run split shifts, but infrequently.

SURVEY FINDINGS: COMPARABLE FERRY SYSTEMS

Washington State Ferries

Mission

WSF, the nation's largest ferry system, is a state agency that serves as a marine highway and transit system, benefiting all of Washington. The System directly serves eight Washington counties and the Canadian Province of British Columbia. WSF has historically operated two passenger-only ferry routes: Seattle-Bremerton and Seattle-Vashon. With operating cost cutbacks, the Bremerton passenger-only route was discontinued in September 2003.

Management

WSF is a division of the Washington State Department of Transportation. Its revenues and expenditures are subject to appropriation by the state legislature.

Ownership

WSF owns the vessel and terminals used for its Seattle-Vashon service.

Market

The Washington State Office of Financial Management (OFM) estimates that, in 2004, Seattle had a population of 572,600, and Vashon Island a population of 5,175. Ridership on the Seattle-Vashon route has totaled 201,142 over the last four quarters. This is down from a FY 2002 ridership of approximately 243,000.

About half of the Seattle-Vashon route's ridership comes from South Kitsap county via WSF's Southworth-Vashon passenger-vehicle ferry service. The 2004 population of Kitsap County is estimated to be 239,500 by OFM.

Route

WSF currently operates 16 hours of weekday-only service on the Seattle-Vashon route, including two departures from Vashon in the morning peak period, and two from Seattle during the evening peak. The crossing from Vashon Ferry Terminal to the Pier 50 Ferry Terminal in Seattle takes approximately 35 minutes.

Vessels

The Seattle-Vashon route is served by the Skagit and the Kalama, identical 112-foot passenger vessels, each with a capacity of 250 passengers and a speed of 25 knots. Both vessels were purchased new in 1989 for a total cost of $5 million. The two vessels are both tied and maintained at WSF's Eagle Harbor facility, which is also where their respective crews originate. The boats alternate as the Seattle-Vashon vessel.

Funding and Finance

WSF's System-wide total cost recovery was 78% in FY 2004. In addition to tariffs, concession fees, and other revenues generated from customers, WSF revenues come from a state motor fuel tax, vehicle license fees, and the state Motor Vehicle Fund.

On the Seattle-Vashon route, the regular round trip adult fare is $7.70 for departures from Seattle. This represents the standard Central Sound fare of $5.70, plus two one-way passenger-only surcharges of $1 each. No fares are collected for departures from Vashon. The farebox recovery rate for the Seattle-Vashon route was 23.7% in FY 2003.

Table D-6
WSF Seattle-Vashon Round Trip Fares

Adult	$7.70
Senior/Disabled	$3.80
Youth (5-18)	$6.60
Child under 5	FREE
With ticket from Frequent User Book	$6.65
With monthly pass (assuming 20 trips/month)	$5.25
Bicycle Surcharge	$1.00

Source: Washington State Ferries, 2004

Labor

Employees: 5 on-board crew for Seattle-Vashon service

Unions: Twelve labor unions represent WSF employees, including the Inlandboatmen's Union of the Pacific for deckhands, the Marine Engineers Beneficial Association for engineers, and the International Organization of Masters, Mates, and Pilots for captains.

Split shifts: None

Min. call-out: 8 hours

Overtime: Paid at 200%

Part-time: There are few part-time deck crew positions under the current labor agreement. Most part-time positions are on the night watch for the Edmonds-Kingston route. The Seattle-Vashon passenger-only route does not involve any part-time workers.

Golden Gate Ferry (San Francisco, CA)

Mission

A division of the Golden Gate Bridge, Highway, and Transportation District, the Golden Gate Ferry (GGF) provides passenger-only service between Larkspur and Sausalito, and San Francisco.

Management

GGF is led by the Ferry Division Chief at the Bridge, Highway, and Transportation District. The Chief and other District staff are hired by a Board of Directors, made up of elected and appointed officials from six Bay area counties.

Ownership

GGF owns all of its vessels, as well as its Larkspur and Sausalito docks. The San Francisco dock is leased from the Port of San Francisco. GGF recently begun work on nearly $1 million in security improvements, including new walls and cameras, at its Larkspur and San Francisco terminals. This work was financed by a federal grant, as well as the proceeds from the sale of an outdated vessel.

Market

The California Department of Finance (DOF) estimates a 2004 population of 7 million people in the Bay area, including 12,000 in Larkspur and 7,325 in Sausalito. In all of Marin County, DOF estimates a population of 250,200 in 2004.

In the year ending June 30, 2003, total annual GGF ridership was 1.5 million, and average weekday ridership was 4,094 at Larkspur and 890 at Sausalito.

Routes

GGF operates two daily routes: San Francisco-Larkspur and San Francisco-Sausalito. Service on both routes continues, though less frequently, through mid-day. On weekdays, GGF provides 16.5 hours of service on the Larkspur route, and 13 hours on the Sausalito route.

Vessels

GGF operates four passenger-only vessels, with one in reserve. A sixth vessel was recently retired and sold. All Golden Gate Ferries are wheelchair accessible and allow bicycles aboard.

Table D-7
Vessels Operated by Golden Gate Ferry

	Spaulding vessels	M.V. Del Norte	M.V. Mendocino
Designer	Spaulding	Advanced Multi-Hull Design	In-Cat
Number of Vessels	3	1	1
Year Delivered	1976-1977	1998	2001
Service Speed (knots)	20.5	36	36
Passenger Capacity	715	325	450
Length, overall	169 feet, 1 inch	135 feet, 4 inches	141 feet, 1 inch
Type of Hull	Aluminum	Aluminum	Aluminum
Propulsion	2 propellers	4 water jets	4 water jets

Source: Golden Gate Ferry, 2004

Funding and Finance

In the year ending June 30, 2003, GGF posted a loss of $10.7 million. The same year, fare revenues were equal to 30% of operating expenses. Other revenues come from Golden Gate Bridge tolls. Instructed to cut $1.5 million in annual expenses, GGF recently adopted a program of cost cuts that included adjustments to the ferry schedule, a shift in the mix of vessels in daily use to reduce crew requirements, labor re-negotiations to cut 1 master and 10 deckhand positions, and cuts in administrative and landside operations.

The one-way fare for adults is $6.15 on either GGF route.

Table D-8
Golden Gate Ferry Fares (One-Way)

Adult	$6.15
Senior	$3.05
Youth (6-12)	$4.60
Child under 5	FREE
With ticket from 20-ride book	$3.85 to/from Larkspur; $3.30 to/from Sausalito

Source: Golden Gate Ferry, 2004

Labor

Employees: Ferry crews total 14 masters and 34 deckhands, to be reduced to 13 masters and 24 deckhands per a recent cost-cutting agreement. Total number of other employees was unavailable.
Union: Inlandboatmen's Union of the Pacific
Split shifts: None
Min. call-out: 8 hours
Overtime: Paid at 150% up to 12 overtime hours, then paid at 200%

SeaBus (Vancouver, British Columbia, Canada)

Mission

SeaBus is a ferry service that makes a 12-minute run across Vancouver Harbor more than 45,000 times each year. It is operated by Coast Mountain Bus Company (formerly BC Transit), a wholly-owned subsidiary of TransLink, the Greater Vancouver Transportation Authority.

Management

TransLink employees are hired by a board of 12 Directors, all of whom are appointed by the Greater Vancouver Regional District (GVRD). GRVD is a partnership of the 21 municipalities and one electoral area that make up metropolitan Vancouver.

Ownership

TransLink owns the SeaBus docks and equipment. The vessels are leased from a private company that has no other involvement in SeaBus, and maintains ownership of them as assets for tax purposes.

Market

BC Stats estimates that the population of Greater Vancouver was 2,126,809 in 2003. The same year, SeaBus ridership totaled 4,640,230. Departures are every 15 minutes between 6 A.M. and 6:45 P.M., and every 30 minutes between 6:45 P.M. and 1 A.M. Total daily operating time is 19 hours and 45 minutes.

Route

SeaBus operates along a single route, across Vancouver Harbor between Vancouver and North Vancouver. Reliability is 99.99%.

Vessels

SeaBus operates two vessels, both double-ended catamarans with aluminum hulls, which run at 11.5 knots. Each vessel requires a four-person crew: one captain, one mate, and two attendants. The same two vessels have been used since SeaBus began operations in 1977.

There is no back-up vessel; recent estimates put the cost of a new vessel at $8.5 million (US dollars).

Funding and Finance

Because SeaBus is one route in an integrated bus, trolley, and ferry system—and because many SeaBus riders board free with a bus transfer—specific cost recovery totals are not available. The average operating cost of SeaBus is $382.50 per hour (US dollars). Costs are driven by fuel and labor.

SeaBus expenditures are budgeted at $3.9 million for 2004, including $2.5 million for direct wages and about $240,000 for overtime (US dollars).

The one-way fare for adults on SeaBus is $2.55 on weekdays, and $1.70 on evenings and weekends (US dollars).

Table D-9
SeaBus Fares

	Weekday	Evening/Weekend
Adult	$2.55	$1.70
Concession*	$1.70	$1.28
Children under 5		FREE
With ticket from 10-ride book: Adult		$2.30
With ticket from 10-ride book: Concession		$1.28
With DayPass: Adult		$6.80
With DayPass: Concession		$5.10
With Monthly FareCard: Adult (assuming 40 trips/month)		$1.86
With Monthly FareCard: Concession (assuming 40 trips/month)		$0.85

*"Concession" is a term for a Child (5-13), Youth (14-19) with valid ID, or Senior.

Note: All fares converted from Canadian dollars, at exchange rate of $0.85 US per $1 Canadian. Fares expire after 90 minutes, and are good for unlimited ridership until then.

Source: SeaBus, 2004

Labor

Employees: 79

Unions: Canadian Autoworkers Union for 73 operations and maintenance employees; Canadian Operating and Professional Employees Union for 2 clerks; none for 4 managers.

Split shifts: None; Crews work 10-hour shifts Monday through Saturday with an 8-hour shift on Sundays, every other work

Min. call-out: 4 hours (used rarely, for overtime)

Overtime: Paid at 200%; 150% pay for training held on a day off

Water Transit Authority (San Francisco Bay Region, CA)

Mission

The Water Transit Authority (WTA) is a new regional ferry authority for the San Francisco Bay Area. WTA is authorized by the State, and managed by a board of directors and staff. WTA does not control existing Bay Area ferry agencies; rather, it has authority over new and expanded passenger-only ferry service in the region, and informally cooperates with the other agencies in efforts to unify the regional system. WTA's service is not yet operating, so information in this profile is based on plans and expectations.

Management

WTA is run by a Board of Directors, which hires the CEO and staff.

Ownership

WTA plans to own its vessels, largely because few privately-owned vessels would meet its high standards for emission control. Terminals will be owned by other public agencies, with the WTA negotiating agreements for use, and in some cases construction or renovation, on a case-by-base basis. The WTA Board has not yet decided who will operate the vessels: WTA employees, or a private contractor. Both appear equally possible at this time.

Market

The California DOF estimates a Bay Area population of 7 million people in 2004; by the time WTA plans are fully implemented in 2025, this number is projected to be 8.2 million. After WTA ferry service begins, Bay Area residents will still be able to commute by car, public transit (bus and light rail train), or using any of the four existing public ferry services. There is no private commuter ferry service available.

WTA projects that, given full funding, its new service and service expansions will lead ridership to grow by 9.3% annually. WTA projects total daily ridership in the region (on existing service plus new and expanded service) to reach 40,855 by 2025, compared with 23,238 projected for 2025 without the WTA, and 11,650 recorded in 1998. Of the 40,855 projected riders in the region, 19,637 (48%) are projected for new WTA routes. 40,855 riders would represent 0.6% of the projected Bay Area population.

Routes

Of the first three WTA routes (two new and one expanded), all are expected to offer mid-day service. Service may be as frequent as hourly during mid-day, and more frequent during peak periods. Service on future routes may be peak-only due to funding limitations.

Vessels

WTA's first vessels will have a capacity of 149 passengers, and a speed of 25 knots. Routes planned for further in the future will use vessels with a 300-350 passenger capacity and a speed of 30-35 knots. Precise vessel capital costs are not yet known, but estimates suggest a cost of $4-6 million for the smaller vessels, $8-11 million for the first larger ones, and $10-12 million for later larger vessels with lower emissions levels.

Funding and Finance

WTA's first two new routes, and its expansion of service along one existing route, will be funded by a voter-approved $1.00 increase on public bridges in the region (other than the Golden Gate Bridge). The six new routes that are planned to follow are not yet fully funded; possible funding sources include a sales tax renewal in three counties, contributions from private real estate developers, and new federal appropriations for ferries.

The WTA cost model breaks down the new system's hourly costs as follows: for 149-passenger vessels, 28% Crew, 39% Vessels & Maintenance, 11% Terminals, 22% Administration; for 350-

passenger vessels, 28% Crew, 50% Vessels & Maintenance, 7% Terminals, 14% Administration. The major cost drivers are crew wages and fuel.

Revenues from fares and parking are projected to reach, by 2025, $23.7 million from new WTA routes, and $45 million from all routes added or expanded by WTA. WTA routes will be required by the Metropolitan Transportation Commission to have an average farebox recovery rate of 40%, and management expects to be at or close to that number.

Fares have not been finalized, but WTA projections assume fares ranging from $7.00 for an 85-minute ride to $1.50 for a ten-minute ride. A schedule of discounts for frequent passengers is being planned.

Labor

Employees:	Undetermined; crew size will probably not exceed five crew members per vessel (including the captain)
Union:	Crews will be unionized, whether WTA uses a private operator or not.
Split shifts:	Likely for certain routes
Min. call-out:	Likely; term undetermined
Overtime:	Undetermined
Part-time:	Not likely

Baylink Ferry (Vallejo, CA)

Mission

Baylink Ferry is a service of the City of Vallejo. Baylink operates one passenger-only ferry route, running daily from Vallejo to San Francisco and back.

Management

Baylink is governed by a Policy Board consisting of the Mayor and six at-large members of the City Council. It is run through the City's Transportation Division, which the City manager oversees. Baylink passenger-only ferry service is actually operated by the Blue & Gold Fleet, a private contractor, under contract with Baylink. Two other private contractors are also retained; Fast Ferries Management, Inc. provides a General Manager, and Stewart & Stevenson performs repairs and planned maintenance on the main engines.

Ownership

The City of Vallejo owns everything used by the Baylink Ferry, including its vessels, terminal, maintenance facility, and equipment.

Market

The California DOF estimates a Bay Area population of 7 million people and a Vallejo population of 121,100, both in 2004. Baylink Ferry ridership in 2004-05 is projected to be 714,659.

Routes

Baylink sails from Vallejo to the San Francisco Ferry Building in downtown San Francisco, with several additional stops per day at Pier 41 in San Francisco. Ferries depart 10-11 times per day from both the Vallejo Terminal and the Ferry Building. During the evening, ferry runs are supplemented by terminal-to-terminal bus service, also provided by Baylink.

Vessels

Baylink runs three high-speed catamaran vessels, each with a rider capacity of 300 and a speed of 34 knots. The newest vessel was purchased new in June 2004 for $11.3 million. The other two vessels were purchased new in 1997 for $13.1 million total. These totals include spare parts and equipment. A used vessel was purchased in 1994 for $3.75 million.

Funding and Finance

Baylink service is funded primarily by fares; remaining costs are covered by an operating subsidy from public bridge tolls. Given the increasing demand for bridge toll funds, however, Baylink is also seeking part of the tax revenue from a proposed sales tax increase in Solano County. Capital funding comes from a combination of state and federal sources.

Baylink's farebox recovery rate, adjusted to account for administrative costs borne by the City of Vallejo staff and terminal costs, has varied between 61% and 78% since FY 2001; in the current fiscal year to date, the adjusted farebox recovery rate is 62%. Costs are driven by crew labor and fuel, which together account for about 59% of Baylink's projected expenditures for FY 2005.

Some overhead administrative functions are absorbed by the staff of the City of Vallejo. These were not included in calculating the above recovery percentages, but it is estimated that they would amount to an additional 13% of the operating budget. Including these additional costs would reduce the FY 2005 recovery rate to approximately 64%.

The regular one-way fare on Baylink is $9.50. Fares are collected for trips in both directions.

Table D-10
Baylink Ferry Fares (One-Way)

Adult	$9.50
Senior/Disabled	$4.75
Youth (6-12)	$4.75
Child under 5	FREE
With DayPass (assuming 2 trips)	$7.50
With ticket from 10-ride book	$7.50
With Napa or Solano DayPass (assuming 2 trips; also includes bus service)	$8.00
With Baylink Monthly Pass (assuming 40 trips/month; also includes bus service)	$5.38
With Fairfield/Vacaville Monthly Pass (assuming 40 trips/month; also includes bus service)	$6.13

Source: Baylink Ferry, 2004

Table D-11
Ridership and Finances of Baylink Ferry

Fiscal Year	Total Ridership	Fare Revenue	Total Ferry Expenses	Farebox Recovery	Adjusted Farebox Recovery*
2001	800,956	$4,545,132	$5,149,266	88%	78%
2002	709,846	$4,280,804	$5,143,940	83%	74%
2003	694,764	$4,361,879	$6,308,424	69%	61%
2004	680,542	$4,370,674	$6,776,012	64%	57%
2005	N/A	N/A	$6,888,000 (projected)	72% (to date)	62% (projected)

*Adjusted rates account for the administrative costs borne by the City of Vallejo staff, estimated to amount to an additional 13% of total ferry expenses. The FY 2005 rate has also been adjusted to account for terminal rent and maintenance costs, based on recent figures. Without the latter adjustment, the FY 2005 rate would be estimated at 64%.
Source: Baylink Ferry, Berk & Associates, 2004

Labor

Employees: 8 maintenance and administrative staff, 12 crew members, plus assistance from city staff
Unions: Inlandboatmen's Union of the Pacific for deckhands, International Organization of Masters, Mates, and Pilots for captains and maintenance engineers
Split shifts: None; all operations covered by 8 and 10 hour shifts
Min. call-out: 4 hours; this provision is used about 5 times per month, usually for post-repair testing or troubleshooting
Overtime: Never scheduled, but sometimes necessary

NY Waterway (New York, NY)

Mission

NY Waterway is the nation's largest private ferry operator, and the largest ferry system serving greater New York City. It is a privately held company, founded in 1986 by real estate developer Arthur Imperatore, Sr.

Management

NY Waterway is not publicly traded, and does not appear to have a Board of Directors. It is led by President and CEO Arthur Imperatore, Jr. and Chairman Armand Pohan, who are the founder's son and stepson, respectively.

Ownership

NY Waterway vessels are all privately owned or leased. The company owns the docks it uses in Weehawken, NJ and in Midtown Manhattan, and leases its docks elsewhere from various public entities, including the Port Authority of New York and New Jersey and the New York State Department of Transportation.

Market

NY Waterway has been reported to hold about 90% of the trans-Hudson River market. In recent years in has carried more than 12 million passengers annually, and about 40,000 daily, mostly across the Hudson River between New Jersey and Manhattan. That number has reportedly dropped by 50% during the last year.

Routes

In 2004 NY Waterway operated 24 daily, passenger-only routes; 23 to and from Manhattan across the New York Harbor, and one across the Hudson River farther north. All but three routes operated on weekends, and most stopped running during the mid-day between-peak period. Vessels on the most active routes operated for 16 hours each weekday.

The company also owns and has operated a fleet of 100 connecting buses in Manhattan and New Jersey. Bus service is complementary.

Vessels and Buses

NY Waterway owns a fleet of 34 ferries, which it has occasionally supplemented with leased vessels. The predominant vessel types are 96-foot mono-hulls that carry 400 passengers and 5 crew at 18 knots; 79-foot catamarans that carry 149 passengers and 3 crew at up to 27 knots; and 65-foot monohulls that carry 97 passengers and 2 crew at 32-38 knots.

The company recently installed a $1 million Global Positioning System (GPS) tracking system for all of its ferries and buses. The system helps assure boats keep below the speed limit in low-wake areas, instantly warns pilots whose ferries cross into prohibited areas (and records the incident), and communicates real-time arrival and departure times to customer service staff. For buses, the system tracks engine performance and fuel consumption, and again communicates arrivals and departures. According to the company, the system increased land-water coordination so much that the rush-hour bus fleet could be reduced from 58 buses to 52 with no impact on service.

Funding and Finance

In its 18-year history, NY Waterway has generally been an independent, private operator; indeed, it originally took a lawsuit for New York City to grant NY Waterway a ferry landing permit for a pier the company itself owned. The company still depends on the farebox as its primary revenue source, but in recent years has become involved with more subsidy arrangements and other deals with public agencies—most notably a $31 million federal subsidy for increased ferry service after the 9/11 attacks shut down the PATH commuter train's Trade Center station. The company's annual operational costs are reported to be $30-35 million.

The company has been in a severe financial crisis since October 2004, due to a number of factors including high fuel costs, employment losses in Manhattan, the return of PATH train service near Ground Zero, and costly defenses against overbilling and antitrust investigations. The situation deteriorated recently when JP Morgan Chase called for payment on a $19 million loan.

After widespread speculation that the company would soon file for bankruptcy under Chapter 11 and Chapter 7, and after the company gave its employees official notice of a possible shutdown, a group of waterfront New Jersey towns planned to pay off the Chase loan and take control of the company. Hoboken Mayor David Roberts explained to the Hoboken Journal newspaper: "We've created an entire, huge economic development area that relies on the ferry service. It's in our vital interest that

we have no interruption in that service." Those plans fell through, however, when a state agency denied approval for $38 million in bonds, saying the towns had skipped two key steps in the approval process. The company planned route closures and warned that it may have to cease all operations in January 2005, but in December 2004 a group of private investors agreed to continue ferry operations by purchasing a large portion of the company, including 16 vessels and a majority of routes. Government approval of the deal is pending.

One-way fares on NY Waterway ferries range from $3.00 to $15.00. Discounts are offered to children and seniors, and lower fares are offered with monthly, 10-trip, and 40-trip passes. Regular and discount fares vary by route.

Labor

Employees:	Approximately 800
Union:	Seafarers International Union for ferry crews; Transport Workers Union for bus drivers; Machinists Union for machinists
Split shifts:	Yes, for the last 12 years
Min. call-out:	4 hours
Overtime:	Paid at 150%; 200% pay beginning on the seventh consecutive workday

SURVEY FINDINGS: REGIONAL TRANSIT AGENCIES

King County Metro Transit

Market

King County Metro Transit serves King County, and a 2003 service area population of 1,798,865. Metro measures market share as a percentage of households with a household member over 16 who has ridden Metro in the last 30 days; the most recent measurement is 32%. Total ridership in 2003, excluding Sound Transit service, was 91.6 million, up from 91.5 million in 2002 but still down from 98.5 million in 2000.

Funding and Finance

Metro's cost recovery for buses was estimated at 22.6% in 2004, and has steadily declined since a fare increase in 2001. Costs are driven by labor, worker's compensation, vehicle age, and demand for paratransit. In 2004, Metro's adopted operating budget totaled $405.2 million, including $190 million in wages and $12 million in overtime expenses.

Labor

Employees:	4,340 (3,708 FTE)
Union:	Amalgamated Transit Union
Split shifts:	Yes, for at least the last 25 years
Min. call-out:	8 hours for full-time operators. Other minimum guarantees apply to overtime, day-off, and part-time assignments.

Community Transit (Snohomish County)

Market

Community Transit serves most of the populated portion of Snohomish county, excluding Everett. It estimates its service area population to be 520,335. In 2003, Community Transit provided 8.4 million passenger trips.

Funding and Finance

Community Transit recovered 17.6% of its operating expenses through the farebox in 2003. Its highest farebox recovery rate in the last five years was 22.0% in 2002. Community Transit's longstanding farebox recovery target is 20%. Excluding federally mandated paratransit service, which posts a cost recovery of 2.4%, the 2003 percentage would be 19.1%, down from 24.1% in 2002. Major cost drivers include labor, benefits, fuel, and insurance. In 2003, Community Transit's operating budget totaled $66.1 million.

Labor

Employees:	598 FTE, including 312 full-time operators and 20 FTE part-time operators
Union:	Amalgamated Transit Union
Split shifts:	Yes, for many years; paid an extra $.25 per hour, over a maximum spread of 13.5 hours
Min. call-out:	2 hours. Also, full-time operators must work a minimum of 8 hours for 5 days per week; there is no minimum for part-time operators, but a 20-hour minimum is likely in the next contract. Any shift longer than 6 hours and 40 minutes is paid for eight hours wages by longstanding practice, but most shifts do not fall short of eight hours by more than a few minutes.
Overtime:	Paid at 150%

Pierce Transit

Market

Pierce Transit serves a 420 square mile region within Pierce County, and a 2003 service area population of 679,815. It provided 11.6 million passenger trips in 2003 (excluding Sound Transit service).

Funding and Finance

Pierce Transit's total farebox recovery (including fixed route, shuttle, and vanpool service) is projected at 14.02% in 2004, down from 16.67% in 2002 and 15.29% in 2003. Recent cost increases have been driven by service expansions, inflation, and higher prices for employee benefits, liability insurance, and fuel. Labor is the major cost driver. In 2004, Pierce Transit's operating budget totaled $77.3 million, including $43.7 million in wages and $10.5 million in benefits.

Labor

Employees: 889 (853 FTE)
Union: Amalgamated Transit Union
Split shifts: Yes, for many years; recent operating changes have made them less common
Min. call-out: 2 hours
Overtime: Paid at 150%

Kitsap Transit

Market

Kitsap Transit serves Kitsap County. Its service area population was estimated at 237,000 in 2003.

Funding and Finance

Kitsap Transit's cost recovery through the farebox, typically 14-15%, was 9% in 2004. Major cost drivers are labor and benefits, which make up about 60% of all operating costs, and fuel. In 2003, Kitsap Transit paid $6 million in wages, of which 1.8% was for overtime. Kitsap Transit's operating budget totaled $21.4 million that year.

Labor

Employees: 194 FTE
Union: Amalgamated Transit Union
Split shifts: Yes, since the 1980s; employer must endeavor to keep them to 35% of all shifts, or fewer. Operators in all categories can work split shifts.
Pay policy: Wages are set at approximately 95% of market rate, with last 5% of pay contingent on measures of individual and group merit.
Operators: Four operator categories: Full-time (35 or 40 work hours guaranteed per week), Extra-board (30 hours per week), Part-time A (15 hours per week), Part-time B (no guarantee). Operators bid for scheduled work based on category and seniority.
Min. call-out: For full-time operators, 2 hours. One hour for extra hours assigned on a workday. Four hours pay at 150% for work assigned on scheduled day off. Ten hours pay for holiday work.
Overtime: Paid at 150% (or 1.5 hours compensatory time per overtime hour). Accrues after 40 hours of work in one work week, made available in order of seniority.
Conditions: All workers should be scheduled for 2 consecutive days off whenever possible. Four-day workweeks at 10 hours per day may be scheduled.

Jefferson Transit

Market

Jefferson Transit serves Jefferson County. Its service area population was estimated at 26,700 in 2003. That year, it provided 466,926 passenger trips.

Funding and Finance

Jefferson Transit's cost recovery was 3.3% in 2003. Its operating budget that year totaled $2.6 million.

Labor

Employees: 24.5 FTE
Union: Amalgamated Transit Union
Split shifts: Yes, but limited
Min. call-out: 2 hours
Overtime: Paid at 150%

Island Transit

Market

Island Transit serves an Island County service area population of 83,000. It provided 784,482 passenger trips in 2003.

Funding and Finance

In 2004, Island Transit's operating budget totals $7.0 million. Cost drivers are labor, benefits, fuel, and insurance. Cost recovery through the farebox is nonexistent, as Island Transit does not collect fares.

Labor

Employees: 73 FTE
Union: Not unionized
Split shifts: Rare; every effort is made to maximize the length of shifts
Min. call-out: None
Overtime: Paid at 150%. Accrues after 40 hours of work in one work week.

SUPPLEMENTARY PROFILE: BC FERRIES (BRITISH COLUMBIA, CANADA)

Although it is not primarily in the business of providing passenger-only ferry service, BC Ferries of British Columbia was also surveyed for informational purposes.

Mission

BC Ferries is the primary provider of ferry service around British Columbia (BC), Canada. Of the 25 routes it operates, only one is passenger-only. The others are passenger-vehicle routes.

Management

BC Ferries was restructured in 2003, changing from a government-run Crown corporation to an independent corporation that is "publicly owned but privately functioning." Proponents of the change cited a need to isolate long-term business decisions from short-term political pressures. BC Ferries now holds a 60-year contract with the Province of British Columbia to provide ferry service along 25 designated routes. All voting shares in BC Ferries are owned by a tax-exempt corporation called the British Columbia Ferry Authority, which appoints the BC Ferries Board of Directors. The Province of British Columbia holds a non-voting interest as well, and BC Ferries' services and fares are regulated by the independent BC Ferry Commission. BC Ferries is run by a Board of Directors, which hires the executives and staff.

Ownership

BC Ferries owns 33 of its 35 vessels, and operates the other two under prepaid capital leases. The vast majority of BC Ferries' terminals are owned by the Province, leased to BC Ferries through 2063.

Market

BC Ferries operates 35 vessels along 25 routes, serves 47 ports, and carried 21.4 million passengers and 8.3 million vehicles in the fiscal year ending March 31, 2004. The company enjoys a virtual monopoly on ferry service around BC, and is the only provider of ferry service for non-commercial vehicles. BC Ferries' main source of competition is air travel, which has experienced high growth in recent years, but still only accounts for about 4% of the market for passenger service from the lower BC mainland to Vancouver Island. BC Ferries also competes with one high speed passenger-only service between Vancouver and Nanaimo, which captures less than 1% of BC Ferries' total passenger traffic, and one commercial drop-trailer and barge ferry service. The greatest potential competition for BC Ferries would come from a bridge between Vancouver Island and the mainland, but no such bridge is expected to be constructed in the foreseeable future.

Routes

BC Ferries' contract with the Province of BC mandates that it provide service along various ferry routes around coastal BC. These routes range from 15-minute hops around the Southern Gulf Islands to 8-hour runs up the Discovery Coast.

Vessels

BC Ferries operates 35 vessels. They vary widely; the 560-foot *Spirit of British Columbia* carries 2,052 passengers, 48 crew members, and 470 vehicles, while the 111-foot *Nimpkish* carries 133 passengers, 5 crew members, and 16 vehicles. The average vessel is 32 years old, and 30 vessels are in the second half of their expected lives.

Funding and Finance

In the year ending March 31, 2004, BC Ferries took in $533.37 million in revenue and posted net earnings of $28 million (all totals Canadian). The latter figure is calculated by treating federal subsidies and fees from the province as revenues; without these, BC Ferries would have posted a net loss of $101,796. In the same year, toll revenues were equal to 79% of operating expenses. (This figure excludes amortization and other non-operating expenses, as well as retail and other non-toll revenues.) Major cost drivers are fuel and labor. Fares vary by route and vehicle size. Discounts are available for students, seniors, disabled persons, groups, and, on some routes, frequent passengers and off-peak passengers.

Labor

Agreement:	The most recent contract between BC Ferries and the union expired in 2003, and the two parties were unable to reach agreement. After a nearly weeklong strike during the busy holiday season, they submitted to binding arbitration. The arbitrator's decision was issued in October 2004. Union leaders reacted by vowing to work politically to make BC Ferries a Crown corporation again.
Employees:	3,159 FTE employees: 2,828 full-time permanent employees, as well as approximately 1,700 casual employees who are "on-call" on a full-time, part-time, or seasonal basis. Moving from casual to permanent status can take an employee ten years or longer.
Union:	2,828 employees are represented by BC Ferry and Marine Workers' Union
Split shifts:	None
Min. call-out:	2 hours
Pay:	By arbitrator's decision, wages are frozen for 3 years, retroactive to fall 2003. Increases are scheduled to be 1% in fall 2006 and 2007, 2% in fall 2008 and 2009. On scheduled shifts of 10 or 12 hours, pay is 110% for new employees and 127-129% for grandfathered employees.
Overtime:	Overtime is paid at 200%, in 30 minute increments, and not for periods of 5 minutes or less. Arbitrator's decision called for more negotiations to reduce scheduled overtime.
Part-time:	Part-time workers are paid at 85-100%, depending on hours worked, with limited benefits. Many work full-time hours, without full-time status. Arbitrator's decision called for more negotiations to reduce this practice.
Seasonal:	Seasonal workers are paid at 85%, with no benefits

METHODOLOGY

Profiles in this survey are based on information gathered from a combination of sources. The typical pattern was; 1) preliminary web research, followed by 2) calls to system leaders, 3) phone interview or questions and answers exchanged by e-mail and US mail, and 4) follow-up questions and clarifications by phone and e-mail. The following is a sample list of questions, from an e-mail to a ferry system manager. The questions fall into four groups:

General

1. I understand that [ownership situation]; is that correct?
2. Do you have an estimate of your market share among [area] commuters?

Labor

1. Are your ferry crews unionized? If so, which unions represent them?
2. Do you run split shifts? When were they instituted?
3. Do you have minimum call outs? (If so, for what period? How often are they used?)
4. What percentage of your wages paid come from overtime?

Operations/Finance

1. What is your vessel capacity and percent of capacity achieved, by major sailing block?
2. What is your farebox recovery rate? How has it changed over time? What are your major cost drivers?
3. What is the capital cost of your most commonly used vessel types?
4. Is the farebox your primary funding source? How reliable and predictable is it? What other revenue sources support your passenger ferry services (e.g. subsidies, FEMA money, parking fees)?

Data Requests

I've been asked to document, if possible, the following aspects of [System's] ferry operations.

- Crew size and composition by vessel size/type
- Ridership and revenues for recent history (including revenue sources)
- Operating budget with labor details (including overtime pay, travel pay, etc.) and number of employees
- Would you be willing to share with me any of this information?

INTERVIEWS CONDUCTED

BC Ferries
Joanne Whittier, Manager, Communications Services

Baylink Ferry
Marty Robbins, Interim Director

Water Transit Authority
Steve Castleberry, CEO

Golden Gate Ferry
Al Zahradnik, Director of Planning

NY Waterway
Allen Warren, Ferry Operations Manager

Community Transit
Jim Turpie, Chief Administrative Officer
Joy Munkers, Manager, Strategic Planning & Grants

Island Transit
Sandra Kuykendall, Administration & Finance Manager

King County Metro Transit
Kathy Morgan, Administrative Assistant to the General Manager, Transit Division

Kitsap Transit
Jim Lundstrom, Finance Director

Pierce Transit
Lind Simonsen, Public Information Officer

ATTACHMENT E
ROUTE-BY-ROUTE OPERATING PRO FORMAS

Table E-1
Operating Pro Formas – Explanation of Terms

Operating characteristics	Explanation
Cycle time	Time required to complete a full circuit: load passengers, set sail, cross Sound, disembark, load passengers, set sail, cross Sound, disembark
Sailings in peak hour	Number of sailings required to carry estimated one-hour peak demand
Total seats in peak hour	Number of sailings times vessel size
Peak hour headways	Time between sailings during peak hour service
Number of vessels in service to meet headway	Number of vessels required to meet sailing frequency determined above
Total fleet size (including maintenance spares)	Number of vessels in service plus one maintenance spare
Peak demand	
PM peak Westbound demand (4-hour period)	Estimated demand for a given route, including both transfers from other routes and induced demand
Baseline	
Peak-only service (8-hours)	
Annual ridership	Actual ridership on the route, including peak and off-peak direction. Does not include mid-day ridership. Varies with total seats available according to vessel size and frequency of service.
Annual fare revenue ($3.80 each way)	Annual ridership times one-way fare
Operating costs	Based on WSF cost assumptions, number of vessels in operation and hours of service per day
Operating surplus/(shortfall)	Sum of fare revenue and operating costs
Cost recovery rate - all revenues	Percentage of costs recovered by fare revenue based on all revenues
Cost recovery rate - new revenues only	Percentage of costs recovered by fare revenue based on full fare for induced demand and incremental increase for transfers from passenger-auto service to POF service
Average vessel utilization	Percentage of seats occupied during peak service
Percent of 4-hour peak demand carried	Percentage of peak direction demand for peak period that is accommodated
Full day service (16-hours)	
Annual ridership	Same as above, with addition of mid-day ridership
Annual fare revenue ($3.80 each way)	See above
Operating costs	See above
Operating surplus/(shortfall)	See above
Cost recovery rate - all revenues	See above
Cost recovery rate - new revenues only	See above
Average vessel utilization	See above
Percent of peak demand carried	See above
Impact of Higher Fares	
Peak-only service (8-hours)	
Annual ridership	Same as above, with decrease in demand due to fare increase
Annual fare revenue ($5.00 each way)	Same as above, applying higher fares to annual ridership figure
Operating costs	See above
Operating surplus/(shortfall)	See above
Cost recovery rate - all revenues	See above
Cost recovery rate - new revenues only	See above
Impact of Public-Private Service Provider & Higher Fares	
Peak-only service (8-hours)	
Annual ridership	See above
Annual fare revenue ($5.00 each way)	See above
Operating costs	Based on public-private provider cost assumptions, number of vessels in operation and hours of service per day
Operating surplus/(shortfall)	See above
Cost recovery rate for public-private provider	Percentage of costs recovered by fare revenue based on all revenues to public-private provider
Revenue impact to WSF	Total impact on WSF due to ridership loss to public-private service
Cost savings to WSF with no service provision	Vashon-Seattle only: with service by public-private provider, WSF saves this amount currently being spent on providing this service
Net Impact to WSF	Vashon-Seattle only: sum of above two lines

Table E-2
Seattle-Clinton POF – Pro Formas

Operating characteristics	149-Pax	250-Pax	350-Pax
Cycle time	135 mins	135 mins	135 mins
Sailings in peak hour	1	1	1
Total seats in peak hour	149	250	350
Peak hour headways	75 mins	75 mins	75 mins
Number of vessels in service to meet headway	2	2	2
Total fleet size (including maintenance spares)	3	3	3
Peak demand			
PM peak Westbound demand (4-hour period)	164	164	164
Baseline			
Peak-only service (8-hours)			
Annual ridership	84,237	84,237	84,237
Annual fare revenue ($3.80 each way)	$320,101	$320,101	$320,101
Operating costs	($2,125,663)	($2,896,222)	($3,666,238)
Operating surplus/(shortfall)	($1,805,562)	($2,576,122)	($3,346,138)
Cost recovery rate - all revenues	15%	11%	9%
Cost recovery rate - new revenues only	8%	6%	4%
Average vessel utilization	28%	17%	12%
Percent of peak demand carried	100%	100%	100%
Full day service (16-hours)			
Annual ridership	90,929	90,929	90,929
Annual fare revenue ($3.80 each way)	$345,530	$345,530	$345,530
Operating costs	($4,251,326)	($5,792,445)	($7,332,477)
Operating surplus/(shortfall)	($3,905,796)	($5,446,914)	($6,986,946)
Cost recovery rate - all revenues	8%	6%	5%
Cost recovery rate - new revenues only	4%	3%	2%
Average vessel utilization	15%	9%	6%
Percent of peak demand carried	100%	100%	100%
Impact of Higher Fares			
Peak-only service (8-hours)			
Annual ridership	68,545	68,545	68,545
Annual fare revenue ($5.00 each way)	$342,725	$342,725	$342,725
Operating costs	($2,125,663)	($2,896,222)	($3,666,238)
Operating surplus/(shortfall)	($1,782,938)	($2,553,497)	($3,323,513)
Cost recovery rate - all revenues	16%	12%	9%
Cost recovery rate - new revenues only	10%	7%	6%
Impact of Public-Private Service Provider & Higher Fares			
Peak-only service (8-hours)			
Annual ridership	68,545	68,545	68,545
Annual fare revenue ($5.00 each way)	$342,725	$342,725	$342,725
Operating costs	($1,617,757)	($1,981,341)	($2,890,301)
Operating surplus/(shortfall)	($1,275,032)	($1,638,616)	($2,547,576)
Cost recovery rate for public-private provider	21%	17%	12%
Revenue impact to WSF	($130,236)	($130,236)	($130,236)

Source: Washington State Ferries, Berk & Associates, 2004

Table E-3
Seattle-Kingston POF – Pro Formas

Operating characteristics	149-Pax	250-Pax	350-Pax
Cycle time	90 mins	90 mins	90 mins
Sailings in peak hour	4	2	2
Total seats in peak hour	596	500	700
Peak hour headways	20 mins	60 mins	60 mins
Number of vessels in service to meet headway	5	2	2
Total fleet size (including maintenance spares)	6	3	3
Peak demand			
PM peak Westbound demand (4-hour period)	1,174	1,174	1,174
Baseline			
Peak-only service (8-hours)			
Annual ridership	667,410	559,844	592,326
Annual fare revenue ($3.80 each way)	$2,536,158	$2,127,407	$2,250,840
Operating costs	($5,314,158)	($2,896,222)	($3,666,238)
Operating surplus/(shortfall)	($2,778,000)	($768,815)	($1,415,398)
Cost recovery rate - all revenues	48%	73%	61%
Cost recovery rate - new revenues only	24%	37%	31%
Average vessel utilization	44%	56%	42%
Percent of peak demand carried	100%	84%	89%
Full day service (16-hours)			
Annual ridership	715,411	707,103	715,411
Annual fare revenue ($3.80 each way)	$2,718,563	$2,686,993	$2,718,563
Operating costs	($10,628,315)	($5,792,445)	($7,332,477)
Operating surplus/(shortfall)	($7,909,752)	($3,105,452)	($4,613,914)
Cost recovery rate - all revenues	26%	46%	37%
Cost recovery rate - new revenues only	13%	23%	19%
Average vessel utilization	24%	35%	26%
Percent of peak demand carried	100%	99%	100%
Impact of Higher Fares			
Peak-only service (8-hours)			
Annual ridership	421,545	436,774	436,774
Annual fare revenue ($5.00 each way)	$2,107,727	$2,183,871	$2,183,871
Operating costs	($3,188,495)	($2,896,222)	($3,666,238)
Operating surplus/(shortfall)	($1,080,767)	($712,351)	($1,482,367)
Cost recovery rate - all revenues	66%	75%	60%
Cost recovery rate - new revenues only	41%	47%	37%
Impact of Public-Private Service Provider & Higher Fares			
Peak-only service (8-hours)			
Annual ridership	421,545	436,774	436,774
Annual fare revenue ($5.00 each way)	$2,107,727	$2,183,871	$2,183,871
Operating costs	($2,426,636)	($1,981,341)	($2,890,301)
Operating surplus/(shortfall)	($318,909)	$202,530	($706,430)
Cost recovery rate for public-private provider	87%	110%	76%
Revenue impact to WSF	($800,936)	($829,871)	($829,871)

Source: Washington State Ferries, Berk & Associates, 2004

Table E-4
Seattle-Vashon POF – Pro Formas

Operating characteristics	149-Pax	250-Pax	350-Pax
Cycle time	75 mins	75 mins	75 mins
Sailings in peak hour	1	1	1
Total seats in peak hour	149	250	350
Peak hour headways	75 mins	75 mins	75 mins
Number of vessels in service to meet headway	1	1	1
Total fleet size (including maintenance spares)	2	2	2
Peak demand			
PM peak Westbound demand (4-hour period)	299	299	299
Baseline			
Peak-only service (8-hours)			
Annual ridership	109,106	109,106	109,106
Annual fare revenue ($3.80 each way)	$414,604	$414,604	$414,604
Operating costs	($1,062,832)	($1,448,111)	($1,833,119)
Operating surplus/(shortfall)	($648,228)	($1,033,507)	($1,418,515)
Cost recovery rate - all revenues	39%	29%	23%
Cost recovery rate - new revenues only	5%	4%	3%
Average vessel utilization	36%	22%	16%
Percent of peak demand carried	69%	69%	69%
Full day service (16-hours)			
Annual ridership	170,941	170,941	170,941
Annual fare revenue ($3.80 each way)	$649,577	$649,577	$649,577
Operating costs	($2,125,663)	($2,896,222)	($3,666,238)
Operating surplus/(shortfall)	($1,476,086)	($2,246,645)	($3,016,661)
Cost recovery rate - all revenues	31%	22%	18%
Cost recovery rate - new revenues only	4%	3%	2%
Average vessel utilization	28%	17%	12%
Percent of peak demand carried	100%	100%	100%
Impact of Higher Fares			
Peak-only service (8-hours)			
Annual ridership	106,236	106,236	106,236
Annual fare revenue ($5.00 each way)	$531,180	$531,180	$531,180
Operating costs	($1,062,832)	($1,448,111)	($1,833,119)
Operating surplus/(shortfall)	($531,652)	($916,931)	($1,301,939)
Cost recovery rate - all revenues	50%	37%	29%
Cost recovery rate - new revenues only	17%	13%	10%
Impact of Public-Private Service Provider & Higher Fares			
Peak-only service (8-hours)			
Annual ridership	106,236	106,236	106,236
Annual fare revenue ($5.00 each way)	$531,180	$531,180	$531,180
Operating costs	($808,879)	($990,671)	($1,445,151)
Operating surplus/(shortfall)	($277,699)	($459,491)	($913,971)
Cost recovery rate for public-private provider	66%	54%	37%
Revenue impact to WSF	($348,454)	($348,454)	($348,454)
Cost savings to WSF with no service provision	$2,896,649	$2,896,649	$2,896,649
Net Impact to WSF	$2,548,195	$2,548,195	$2,548,195

Source: Washington State Ferries, Berk & Associates, 2004

Table E-5
Seattle-Southworth POF – Pro Formas

Operating characteristics	149-Pax	250-Pax	350-Pax
Cycle time	75 mins	75 mins	75 mins
Sailings in peak hour	6	4	3
Total seats in peak hour	894	1000	1050
Peak hour headways	12 mins	20 mins	30 mins
Number of vessels in service to meet headway	7	4	3
Total fleet size (including maintenance spares)	8	5	4
Peak demand			
PM peak Westbound demand (4-hour period)	1,953	1,953	1,953
Baseline			
Peak-only service (8-hours)			
Annual ridership	1,003,221	1,003,221	918,627
Annual fare revenue ($3.80 each way)	$3,812,241	$3,812,241	$3,490,784
Operating costs	($7,439,821)	($5,792,445)	($5,499,358)
Operating surplus/(shortfall)	($3,627,579)	($1,980,203)	($2,008,573)
Cost recovery rate - all revenues	51%	66%	63%
Cost recovery rate - new revenues only	26%	33%	32%
Average vessel utilization	48%	50%	44%
Percent of 4-hour peak demand carried	95%	95%	87%
Full day service (16-hours)			
Annual ridership	1,139,751	1,139,751	1,139,751
Annual fare revenue ($3.80 each way)	$4,331,054	$4,331,054	$4,331,054
Operating costs	($14,879,642)	($11,584,889)	($10,998,715)
Operating surplus/(shortfall)	($10,548,588)	($7,253,836)	($6,667,661)
Cost recovery rate - all revenues	29%	37%	39%
Cost recovery rate - new revenues only	15%	19%	20%
Average vessel utilization	27%	28%	27%
Percent of peak demand carried	100%	100%	100%
Impact of Higher Fares			
Peak-only service (8-hours)			
Annual ridership	789,991	763,451	825,568
Annual fare revenue ($5.00 each way)	$3,949,954	$3,817,254	$4,127,839
Operating costs	($5,314,158)	($4,344,334)	($5,499,358)
Operating surplus/(shortfall)	($1,364,203)	($527,079)	($1,371,519)
Cost recovery rate - all revenues	74%	88%	75%
Cost recovery rate - new revenues only	46%	54%	47%
Impact of Public-Private Service Provider & Higher Fares			
Peak-only service (8-hours)			
Annual ridership	789,991	763,451	825,568
Annual fare revenue ($5.00 each way)	$3,949,954	$3,817,254	$4,127,839
Operating costs	($4,044,394)	($2,972,012)	($4,335,452)
Operating surplus/(shortfall)	($94,439)	$845,242	($207,613)
Cost recovery rate for public-private provider	98%	128%	95%
Revenue impact to WSF	($1,500,983)	($1,450,557)	($1,568,579)
Cost savings to WSF with no service provision	$2,896,649	$2,896,649	$2,896,649
Net Impact to WSF	$1,395,666	$1,446,092	$1,328,070

Source: Washington State Ferries, Berk & Associates, 2004

Table E-6
Seattle-Vashon-Southworth POF Triangle – Pro Formas

Operating characteristics	149-Pax	250-Pax	350-Pax
Cycle time	75 mins	75 mins	75 mins
Sailings in peak hour	5	3	2
Total seats in peak hour	745	750	700
Peak hour headways	15 mins	30 mins	60 mins
Number of vessels in service to meet headway	5	3	2
Total fleet size (including maintenance spares)	6	4	3
Peak demand			
PM peak Westbound demand (4-hour period)	1,553	1,553	1,553
Baseline			
Peak-only service (8-hours)			
Annual ridership	761,880	697,942	709,790
Annual fare revenue ($3.80 each way)	$2,895,143	$2,652,179	$2,697,201
Operating costs	($5,314,158)	($4,344,334)	($3,666,238)
Operating surplus/(shortfall)	($2,419,014)	($1,692,155)	($969,037)
Cost recovery rate - all revenues	54%	61%	74%
Cost recovery rate - new revenues only	27%	31%	37%
Average vessel utilization	51%	47%	51%
Percent of peak demand carried	93%	85%	86%
Full day service (16-hours)			
Annual ridership	886,034	886,034	886,034
Annual fare revenue ($3.80 each way)	$3,366,930	$3,366,930	$3,366,930
Operating costs	($10,628,315)	($8,688,667)	($7,332,477)
Operating surplus/(shortfall)	($7,261,386)	($5,321,737)	($3,965,547)
Cost recovery rate - all revenues	32%	39%	46%
Cost recovery rate - new revenues only	16%	19%	23%
Average vessel utilization	30%	30%	32%
Percent of peak demand carried	100%	100%	100%
Impact of Higher Fares			
Peak-only service (8-hours)			
Annual ridership	612,976	606,890	612,474
Annual fare revenue ($5.00 each way)	$3,064,879	$3,034,451	$3,062,369
Operating costs	($4,251,326)	($4,344,334)	($3,666,238)
Operating surplus/(shortfall)	($1,186,447)	($1,309,882)	($603,869)
Cost recovery rate - all revenues	72%	70%	84%
Cost recovery rate - new revenues only	45%	43%	52%
Impact of Public-Private Service Provider & Higher Fares			
Peak-only service (8-hours)			
Annual ridership	612,976	606,890	612,474
Annual fare revenue ($5.00 each way)	$3,064,879	$3,034,451	$3,062,369
Operating costs	($3,235,515)	($2,972,012)	($2,890,301)
Operating surplus/(shortfall)	($170,636)	$62,439	$172,068
Cost recovery rate for public-private provider	95%	102%	106%
Revenue impact to WSF	($1,164,654)	($1,153,091)	($1,163,700)

Source: Washington State Ferries, Berk & Associates, 2004

ATTACHMENT F
NON-OPERATING REVENUE-GENERATING INITIATIVES AT WASHINGTON STATE FERRY TERMINALS

Introduction

Section Purpose and Approach. This section responds to the legislative proviso's request for an assessment of WSF's revenue-generating opportunities and plans at its terminals. Information in this section was obtained from interviews and materials provided by WSF.

Overview of WSF's Terminal Concession Plan. In recent years WSF has pursued a variety of opportunities to generate revenue through concession sales from its vessels and terminals. In a change of direction from its previous comprehensive contracts with one or two corporate vendors, WSF has shifted to relationships with smaller businesses, allowed for single-terminal contracts, increased entrepreneurial incentives for vendors, and broken down vending into seven segments:

- On-board Food, Beverage, and Retail
- On-shore Food & Beverage
- On-shore news, books, and convenience stores at terminals
- On-shore fast food
- On-board/on-shore cold beverage vending machines
- On-board/on-shore hot beverage and snack vending machines
- On-board/on-shore game machines

WSF's initial Request for Proposals (RFP), which sought vendors that would provide comprehensive food and beverage service System-wide, did not receive any responses. WSF adjusted the RFP five times before any proposals were received, ultimately allowing different vendors to provide service across the same segment in different terminals, and even across the same segment in different areas of the same terminal. The leases that new vendors sign have a term of ten years, with a cancellation option for WSF if it builds a new terminal during that period.

In addition to present efforts to increase concessions revenue, in the long term WSF hopes to increase fare revenues on existing routes by improved methods of sales and marketing, such as partnerships with local hotels or coupons printed on ferry receipts. A new electronic fare system, scheduled for implementation in 2005-06, is a crucial part of these plans.

The following section summarizes revenue-generating opportunities by WSF terminal.

Assessment by Terminal

Downtown Seattle Terminal: Colman Dock. Colman Dock at Pier 52 in Seattle is being remodeled, and will see seven new food/beverage tenants open for business by early 2005. All will be Washington-based businesses. They will include:

- A pasta and pizza restaurant
- A candy store
- A news, book, and convenience store
- Matt's Famous Chili Dogs of Seattle
- World Wrapps of Seattle
- Caffe Appassionato Specialty Coffee Roasting Co. of Seattle

- Commuter Comforts Espresso Café and Wine Bar of Bainbridge Island

The current McDonald's restaurant is being remodeled, and will remain. Colman Dock tenants are projected to generate $538,000 in revenue for WSF in their first full year of operation, the fiscal year ending 2006.

WSF has contributed to improvements in the terminal retail space at a rate of $50 per square foot. Additional improvements have been funded by the tenants. In other WSF terminals, tenants have borne the entire cost of improvements.

In the longer term, WSF is hopeful that it will be able to work with the City of Seattle and private investors to develop a large mixed-use complex at Colman Dock that would include a new terminal. The current WSF capital budget contains $225 million for terminal renovations at Colman Dock.

Anacortes Terminal. At the Anacortes terminal, a ten-year lease was awarded to the Cheesecake Café, also a Washington-based business. The Café operates a snack bar and a gift shop kiosk. The former grossed $102,000 in revenue in its first full month (July), while the latter, capitalizing on the lack of on-board fare, grossed $29,500 in revenue in its first (October). The Café is also negotiating contract terms that would allow it to operate year-round, instead of seasonally as gift sales have always operated in the past. The Café's annual fees to WSF are expected to total $47,000 by 2006.

In the longer term, WSF is planning to construct an expanded retail space at the Anacortes terminal, which may include such offering as a pub restaurant, bookstore, and retail shopping. This effort, which expected to cost $120 million through the next decade, has already begun with the paving of the upper parking lot.

Bainbridge Island Terminal. Commuter Comforts Espresso Café and Wine Bar, currently operating in a kiosk near the Bainbridge Island terminal, will move inside, pending negotiation of terms. It is expected to generate $58,000 annual revenue for WSF.

Clinton Terminal. WSF is in ongoing discussions with two applicants to operate a coffee cart at the Clinton terminal. It is estimated that such a cart would generate $10,000 annual revenue for WSF, beginning in FY 2006.

Edmonds Terminal. An existing small business in Edmonds was recently discovered to be on WSF property. It is possible that it will generate some marginal revue for WSF in the future.

Southworth Terminal. On the site of the Southworth terminal, Catch A Buzz Espresso will soon be operating from a pre-fabricated espresso trailer. It is expected to generate approximately $15,000 in annual revenues for WSF.

Sidney, BC Terminal. In Sidney, BC, WSF has a concessions agreement with the agency that operates the terminal. Concessions generated $16,000 in revenue for WSF during summer 2004; the terminal is open on a seasonal basis.